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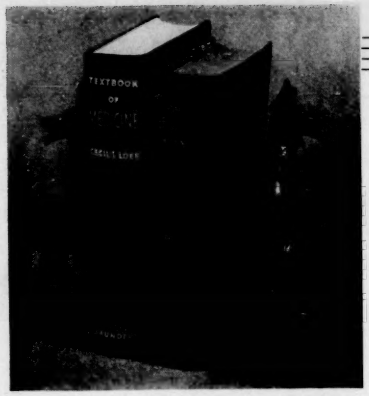


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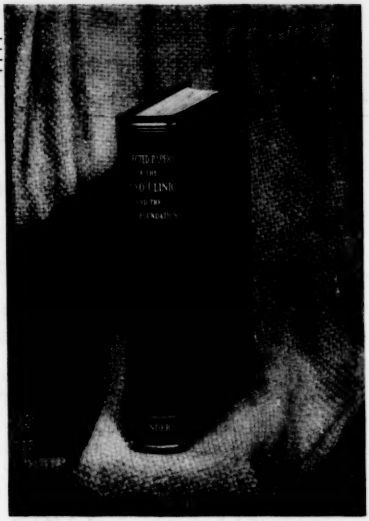

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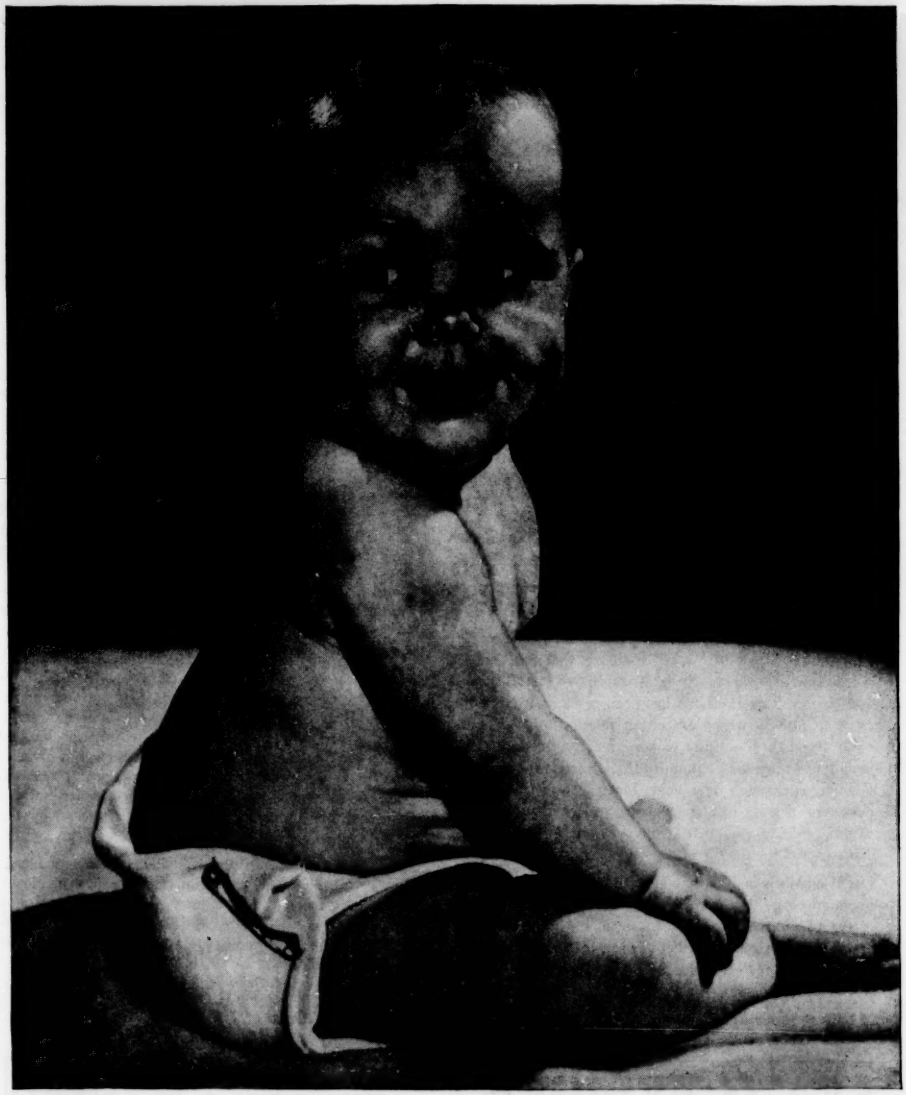

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# WASHINGTON NEWS

## NEW FDA COMMISSIONER CRAWFORD

The most troublesome current problem of the Food and Drug Administration is the false teaching of a "small army of food fakers peddling nutritional nostrums." This is the opinion of Charles W. Crawford, government career man and the new commissioner of FDA. He succeeds Dr. Paul B. Dunbar, whose retirement was announced May 14. Mr. Crawford has been in government service 34 years, starting as a food and drug analyst. Before that he engaged in research and taught chemistry at Oklahoma A. & M. College and at Washington State College. He received his B.S. and M.S. degrees from Oklahoma A. & M. Mr. Crawford has worked closely with Congress and advised in the writing of the Food, Drug and Cosmetic Act of 1938. Since 1944 he has been deputy commissioner.

In an address delivered after he was sworn in, Mr. Crawford asserted that "diet quacks" are preaching the false doctrine that the American food supply is deficient in vitamins, minerals, and other nutritional factors. "They say that every disease, from cancer and heart failure to irritability or insomnia, is caused by malnutrition. Then they insist that we can't get well or stay well or look younger and live longer, unless we supplement our diet with some outlandish food, usually unpalatable." Mr. Crawford said this called for "a vigorous campaign of spreading the truth," that America has the most abundant and nutritious food supply in the world and is enjoying the best health of any nation in history. In advocating a program of strict law enforcement, Mr. Crawford stated: "Our task is lightened by the fact that the great majority of producers consistently comply with both the letter and the spirit of the law. But human errors occur in the best run plants. And there is always an unscrupulous fringe to every industry who disregard the interests of consumers. These impose a work load that compels us to deploy our small force into a very thin screen."

One of Commissioner Crawford's first official acts was the appointment of George P. Larrick as deputy commissioner, the number two position in the agency. Mr. Larrick joined FDA in 1923, after attending Wittenberg College and Ohio State University. Starting as an inspector in the Cincinnati station, he was transferred to Washington in 1928. He became senior food and drug inspector in 1930, chief inspector in 1939, and associate commissioner in 1945. John L. Harvey, who has been serving as director of regulatory management, has been appointed associate commissioner.

## HOUSING-SCHOOL-HOSPITAL PROGRAM

A legislative complication may require the House to vote again on the question of an emergency housing-school-hospital construction program. More than six weeks ago the House rejected a motion to bring this legislation up for debate, but subsequently the Senate passed its own bill on the subject. Since then the House Banking and Currency Committee has taken no action, either on its own once-rejected bill or the Senate version.

Now, however, the committee may be forced to examine the situation again, or allow several major provisions of the present housing law to expire on June 30. These provisions would be extended both in the House bill and the one passed by the Senate. The housing-school-hospital construction sections would give the federal government authority to make grants or loans for construction of hospitals in defense areas, and to operate them if local governments could not or would not assume the responsibility.

In passing the bill, the Senate trimmed to 60 million dollars the fund for aiding "community facilities," including hospitals. To be eligible, a hospital would have to be located in a community designated as a "defense area," and would first have to exhaust every possibility of aid through the Hill-Burton organization. Under the Senate bill, the President would have to designate an agency to handle the hospital assistance program. During debate several Senators said they expected this responsibility would go to the Federal Security Agency's Hospital Facilities Division, the Hill-Burton organization.

## NURSES—SHORTAGE AND ECONOMIC HARDSHIP

The American Nurses Association believes that current "economic imbalances and inequities" are imposing special burdens on nurses and discouraging women from entering the profession. This view was expressed by Mrs. Elizabeth K. Porter, R.N., president of ANA, in testifying before the House Banking and Currency Committee on legislation to extend and strengthen the Defense Production Act. The act includes provision for price stabilization and other defense measures. Mrs. Porter told the committee, which has been holding hearings for some weeks: "Efforts to maintain an adequate nurse force will be seriously jeopardized if our national government fails to correct economic imbalances and inequities that impose special burdens on nurses and other essential but marginal or fixed-income workers. . . . If present inflationary forces are permitted to go unchecked, if the cost of living continues to soar, nurses must face even greater economic hardships."

She noted that "nurses' low incomes and long hours are well known" and that, while wages and salaries generally have risen since the outbreak of the Korean war, salary increases for nurses have been negligible. Mrs. Porter placed the current deficit of nurses for civilian service at 65,000 and said this would be increased by military and civil defense requirements. "As the shortage mounts, staffs become depleted and chaotic standards of care result. Nurses are robbed of the satisfaction of giving good patient care, the reward they value most." In order to meet all needs for nurses, the profession must retain nurses who are now active, bring inactive nurses back to practice, and attract new recruits, even though teachers, dietitians, librarians, and other modest-income professionals fare better, Mrs. Porter testified.

## APPRAISAL OF VA MEDICAL DEPARTMENT

Although the Board of Chief (Medical) Consultants to the Veterans' Administration will continue its critical appraisal of the agency's medical department, it is not prepared to enter publicly into the Magnuson-Gray dispute. Board Chairman Ralph M. Tovell made this plain at the end of the board's two-day meeting in Washington, the first time the board has had an opportunity to investigate VA policies since the ouster of Dr. Paul Magnuson as medical director last January. Dr. Tovell said the board's attitude is "essentially the same" as when Administrator Carl Gray removed Dr. Magnuson. At that time the members expressed confidence in the new director, Vice Admiral Joel T. Boone, but noted: "Our chief concern is that the administrative organization of the medical department be so (arranged) . . . that you will have the authority to fully carry out . . . your responsibilities." Dr. Towell said the board would informally present its views to the Senate sub-

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committee under Senator Hubert Humphrey (D., Minn.), which is nearing the end of its investigation of VA's medical department administration.

## PRICE CEILINGS FOR PROFESSIONAL SERVICES

After two days of hearings, a special panel is preparing recommendations regarding price ceilings for professional services, including medical. The panel was set up by the U. S. Wage Stabilization Board to study problems of industries and professions exempt from general price ceilings. A number of witnesses from labor and consumer groups were heard by the experts, who allowed other individuals or associations to file statements. Covered by the study, in addition to professional services, is a wide cross section of business and industry, including railroads, communication systems, insurance carriers, certain public utilities, hotels, motion picture houses, newspapers, printing and publishing.

The panel hopes to answer the following questions:

1. Do or should wage controls apply to any or all of these industries (and professions)?

2. To what extent should any or all of these industries be controlled, and what wage policies and procedures of wage stabilization should be applied to them?

## DEFENSE

Federal Civilian Defense Administration has prepared a speakers kit on biological warfare. Included are quotations from authorities on the subject and excerpts from the CDA manual "Health Services and Special Weapons Defense" and two additional CDA publications, "The Potentialities of Biological Warfare Against Man" and "What You Should Know About Biological Warfare." A model speech on defenses against biological warfare also is furnished. Copies of the kit may be obtained from Thomas Needham, Director of the Public Liaison Division, Public Affairs Office, Federal Civil Defense Administration, Washington 25, D. C. . . . Disaster expert James L. Fieser has been named chief of the Mass Care Planning Branch, Health and Welfare Services Office, CDA. He directed relief after the Japanese earthquake of 1923, the Mississippi Valley flood relief in 1927, and similar operations during his 33 years with the American Red Cross. . . . The Seventh Day Adventist Church, which condemns acts of violence and lists its members as "conscientious objectors," is training its draft-eligible men as medical corpsmen. About 4,000 men of draft age have been trained in schools run by the church. . . . In a letter to the governor of Ohio, CDA Administrator Millard Caldwell referred to the 20 million dollars authorized for medical supplies on a state-matching basis as "unrealistic," in view of the limited funds of the states. . . . The Red Cross is opening 12 training centers on college campuses this summer to train instructors for its course on home care of the sick. . . . Office of Defense Mobilization Director Charles E. Wilson, in making official the transfer of Dr. Rusk's Health Resources Advisory Committee from the National Security Resources Board to his office, said, "This important group has a vital contribution to make to the over-all mobilization effort."

## BIBLIOGRAPHY OF CHRONIC DISEASES

"Chronic Illness," a selected bibliography and digest of more than 500 books, articles and pamphlets on the broader aspects of chronic illness, is available through the Government Printing Office. Compiled and written by Violet B. Turner, consultant to the Public Health Service's Division of Public Health Methods, the book is designed to "provide fairly comprehensive digests of articles, books, and pamphlets that presnt information on various types of chronic illness or which stress needs, experiences, or recommendations applicable to more than one type." The paper-bound book is priced at 50 cents. . . . The communicable disease summary for the week of May 26 shows that the number of cases of encephalitis was well above the five-year median. There were 31 cases this year; the median is 11. . . . The Federal Security Agency documentary movie on rheumatic heart diseases, "Report on the Living," had its television premiere this week. It tells the story of a 10-year-old boy cured of rheumatic heart disease after treatment with pituitary adrenocorticotropic hormone (ACTH). . . . National Cancer Institute research workers have developed a synthetic compound, "amphenone B," which alters hormone production and increases the size of the adrenal glands.

## LEGISLATIVE NOTES

The Senate Preparedness Subcommittee recommends expanding medical facilities at Camp Breckinridge, Kentucky; Fort Riley, Kansas, and Sheppard Air Force Base, Texas, but makes no recommendations for expansion in its report on the naval training center at San Diego, Calif. . . . Dr. John Cronin, chief of the PHS Hospital Facilities Division, is not worried about getting materials for Hill-Burton hospital construction. He told the Senate Appropriations Committee that his division could let contracts for the full 150 million dollars authorized by law and he considered the purpose of the controlled materials plan (going into effect in July) was "to reduce the luxuries, but to provide the essentials. In my opinion the hospitals are essential." The House approved half the authorized amount, or 75 million dollars. . . . The use of female hormones in male poultry came up for discussion again before the House Select Committee on Chemicals in Foods. Earlier witnesses had warned of possible ill effects on the consumer if the quantities of diethylstilbestrol used to fatten and tenderize poultry were increased, and Chairman James J. Delaney, of New York, called four more witnesses to give their views on the issue. They are Dr. Robert K. Enders, department of zoology, Swarthmore College; Dr. Carl G. Hartman, director of the division of physiology, Ortho Research Foundation, Raritan, N. J.; Mr. S. A. Asdell, professor of animal physiology, New York State College of Agriculture, and Dr. Robert Greenblatt, University of Georgia College of Medicine.

## MISCELLANY

Leonard W. Mayo is chairman of the newly organized National Midcentury Committee for Children and Youth. The organization is an outgrowth of the White House Conference held last December. . . . The Second National Commission on Life Adjustment Education for Youth met with Office of Education officials to discuss plans for regional conferences and a proposed national conference for October. . . . Miss Ruth Johnson is the first nurse assigned to Iran under Point IV. . . . A Federal Trade Commission stipulation prohibits advertising "boncquet" tablets as a treatment for borderline anemia. . . . Dr. Harold E. Mann, former staff psychiatrist at the Judge Baker Guidance Center in Boston, has been appointed full-time psychiatric services consultant to the Children's Bureau. He will assist Dr. Katherine Bain, associate chief of the Bureau, in planning of Bureau programs and also will work with the field staff on psychiatric problems of children. . . . The National Production Authority is allowing hospitals and clinics, among other businesses and institutions, to exceed their defense order ratings by 20%, to compensate for increased prices and accelerated programs. While the ruling allows a 20% expansion over the base period, the net effect, it is estimated, will be to provide only the necessary amount of scarce materials for maintenance, repair, and operation. Defense orders (DO's) stamped on an order allow the distributor to replenish his stocks by that amount.

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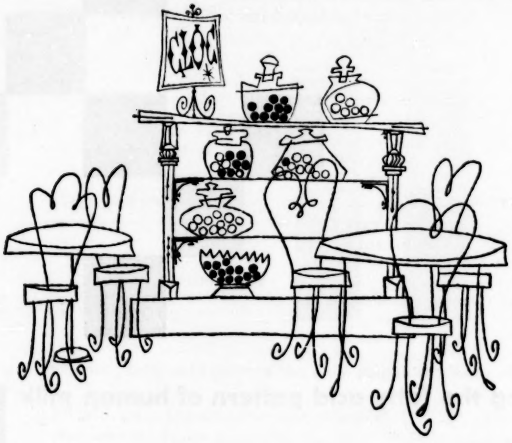



**White's Cod Liver Oil Concentrate tablets**

. . . provide vitamins A and D in easy-to-take tablets. Because of their pleasant flavor, most children prefer to chew them like candy. Yet the tablets are small enough to be easily swallowed, even by young children.

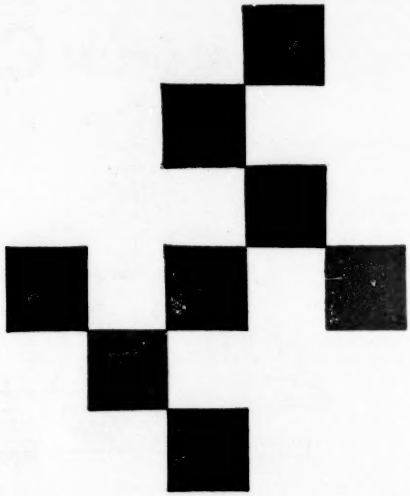
Each White's CLOC Tablet is equivalent in vitamin content* to one teaspoonful of cod liver oil and supplies 312 units of vitamin D, plus 3,120 units of vitamin A. White's Cod Liver Oil Concentrate Tablets are inexpensive and especially suited to maintaining antirachitic protection throughout the years of active growth.

**WHITE LABORATORIES, INC.**

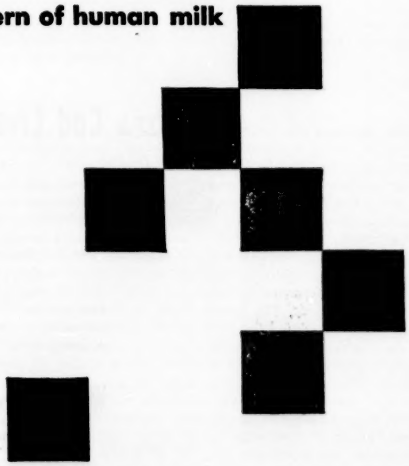
**Pharmaceutical Manufacturers, NEWARK 7, N. J.**

*U.S.P. Minimum Standards.

a new product



**approaching the fatty acid pattern of human milk**



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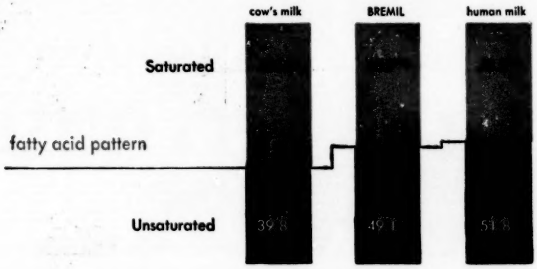
A correct fatty acid pattern is highly desirable in infant foods. The percentages of saturated and unsaturated fatty acids in BREMIL approach the pattern of human milk. This is achieved in BREMIL by a careful blending of three scientifically chosen vegetable oils—palm, coconut, and peanut—which resemble human milk in nutritional characteristics.[1]

The fatty acids of human milk and BREMIL are divided nearly evenly between saturated and unsaturated, whereas cow's milk shows a much greater percentage of the more irritant saturated fatty acids.[2] Moreover, the fat in BREMIL, like the fat in human milk, is in a fine state of emulsion. As a result, BREMIL is well-tolerated, well-digested, and well-assimilated.




**Nor is the scientific fatty acid pattern the only unique attribute of BREMIL**

BREMIL has an adjusted calcium-phosphorus ratio (1½:1)[3,4]... BREMIL supplies adequate vitamin C and other vitamins... BREMIL contains the same carbohydrate as in human milk[5]... BREMIL forms curds of small particle size.

BREMIL formula preparation is as rapid as with a liquid product (no need to make into a paste)... Standard dilution is 1 level tablespoonful and 2 fl. oz. water... Each level tablespoonful BREMIL powder supplies 44 calories.

Complete information and a trial supply may be obtained upon request.

BREMIL is available in drugstores in 1 lb. cans.

*flexible, palatable, easy to prepare*

# Bremil®

*powdered infant food*

Prescription Products Division

The **BORDEN** Company 350 Madison Avenue, New York 17

1. Macy, I. G.: *J. Dis. Children* 78:589, 1949.
2. Jeans, P. C., and Marriott, W. McK.: *Infant Nutrition*, 4th ed., 1947.
3. Gardner, L. I., Butler, A. M., et al.: *Pediatrics* 5:228, 1950.
4. Nesbit, H. T.: *Texas State J. M.* 38:551, 1943.
5. *Bull. National Research Council*, No. 119, Jan. 1950.

| SOCIETY | PRESIDENT | SECRETARY | MEETING |
|---|---|---|---|
| AMERICAN MEDICAL ASSOCIATION | Elmer L. Henderson, Louisville, Ky | George F. Lull, 535 N. Dearborn St., Chicago 10 | Los Angeles, Dec. 4-7 |
| Aero Medical Association | Arnold D. Tuttle, Chicago | T. H. Sutherland, 214 S. State St., Marion, Ohio | |
| American | | | |
| Academy of General Practice | Jason P. Sanders, Shreveport, La. | Mr. Mac F. Cahal, 406 W. 34th St., Kansas City 2, Mo. | Atlantic City, March 24-27 |
| Academy of Ophth. and Otolaryn. | Derrick Vail, Chicago | W. L. Benedict, 100 First Ave. Bldg., Rochester, Minn. | Chicago, Oct. 14-18 |
| Academy of Pediatrics | Paul W. Beaven, Rochester, N. Y. | C. G. Grulee, 636 Church St., Evanston, Ill. | Toronto, Can., Oct. 20-25 |
| Association for Thoracic Surgery | Alfred Blalock, Baltimore | Brian Blades, 901 23d St., N.W., Washington 7, D. C. | |
| Association of Anatomists | Sam Clark, Nashville, Tenn. | Normand L. Hoerr, 2109 Adelbert Rd., Cleveland 6 | Providence, R. I., March 19-21 |
| Assn. of Genito-Urinary Surgeons | Roger C. Graves, Boston | Norris J. Heckel, 122 S. Michigan Ave., Chicago 3 | |
| Assn. of Industrial Phys. & Surg. | E. H. Carleton, East Chicago, Ind. | E. C. Holmblad, 29 E. Jackson Blvd., Chicago 4 | |
| Assn. of Obst., Gyn. & Abd. Surg. | James K. Quigley, Rochester, N. Y. | William F. Mengert, 2211 Oak Lawn Ave., Dallas, Texas | Hot Springs, Va., Sept. 6-8 |
| Assn. of Pathologists and Bacteriologists | Tracy B. Mallory, Boston | Alan R. Moritz, 2085 Adelbert Road, Cleveland 6 | |
| Association of Railway Surgeons | J. A. Cahill, Dubuque, Iowa | Chester C. Guy, 3500 Stony Island Ave., Chicago 37 | |
| Association of the History of Medicine | Ralph H. Major, Kansas City, Kansas | Iago Galdston, 2 E. 103d St., New York 29 | |
| Association on Mental Deficiency | Mr. R. H. Hungerford, New York | Neil A. Dayton, P. O. Box 96, Willimantic, Conn. | |
| Broncho-Esophagological Association | Herman J. Moersch, Rochester, Minn. | Edwin N. Broyles, 1100 N. Charles St., Baltimore 1 | |
| Clinical and Climatological Association | Joan Minor, Washington, D. C. | Marshall N. Fulton, 124 Waterman St., Providence, R. I. | Skytop, Pa., Nov. 5-7 |
| College of Chest Physicians | Louis Mark, Columbus, Ohio | Mr. Murray Kornfeld, 500 N. Dearborn St., Chicago 10 | |
| College of Physicians | Maurice C. Pincoffs, Baltimore | Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4 | Cleveland, April 21-25 |
| College of Radiology | C. Edgar Virden, Kansas City, Mo. | Mr. W. C. Stronach, 30 N. Wacker Drive, Chicago 6 | |
| College of Surgeons | Henry W. Cave, New York | Michael L. Mason, 40 E. Erie St., Chicago 11 | San Francisco, Nov. 5-9 |
| Congress of Physical Medicine | Arthur L. Watkins, Boston | Walter J. Zeiter, 2020 E. 93d St., Cleveland 6 | Denver, Colo., Sept. 4-8 |
| Dermatological Association | Henry E. Michelson, Minneapolis | L. A. Brunsting, 102 2d Ave., S.W., Rochester, Minn. | |
| Gastro-Enterological Association | John G. Mateer, Detroit | Dwight L. Wilbur, 655 Sutter St., San Francisco | |
| Goiter Association | J. C. Davison, Atlanta, Ga. | G. C. Shivers, 100 E. St. Vrain St., Colorado Springs | |
| Gynecological Society | Walter T. Dannreuther, New York 21 | John I. Brewer, 104 S. Michigan Ave., Chicago | Hot Springs, Va., May 1952 |
| Laryngological Association | Gordon B. New, Rochester, Minn. | Louis H. Clerf, 1530 Locust St., Philadelphia 2 | Atlantic City, May 6-7 |
| Laryn., Rhin. and Otol. Society | C. Stewart Nash, Rochester 7, N. Y. | C. S. Nash, 277 Alexander St., Rochester 7, N. Y. | Toronto, Can., May 22-24 |
| Medical Women's Association | Elizabeth S. Waugh, Philadelphia | M. C. J. Pfeiffer, Woman's Med. Coll. of Pa., Philadelphia 29 | |
| Neurological Association | Wilder Penfield, Montreal, Can. | H. Houston Merritt, 710 W. 168th St., New York 32 | Atlantic City, June 18-20 |
| Ophthalmological Society | John H. Dunnington, New York | M. C. Wheeler, 30 W. 59th St., New York 19 | |
| Orthopedic Association | James S. Speed, Memphis, Tenn. | C. Leslie Mitchell, Henry Ford Hosp., Detroit 2 | W. Sulphur Spgs., June 20-23 |
| Otological Society | Gordon D. Hoople, Syracuse, N. Y. | John Lindsay, 950 E. 59th St., Chicago | Toronto, Can., May 1952 |
| Pediatric Society | Bronson Crothers, Boston | Henry G. Poncher, 1819 W. Polk St., Chicago 12 | Atlantic City, May 2-5 |
| Physiological Society | H. C. Bazett, Philadelphia | M. H. Lee, 2101 Constitution Ave., Washington 25, D.C. | |
| Proctologic Society | Hoyt R. Allen, Little Rock, Ark. | W. W. Green, 1838 Parkwood Ave., Toledo 2 | |
| Psychiatric Association | Leo H. Bartemeier, Detroit | R. Finley Gayle Jr., 501 E. Franklin St., Richmond 19, Va. | Atlantic City, May 12-16 |
| Public Health Association | W. P. Shepard, San Francisco | R. M. Atwater, 1790 Broadway, New York 19 | San Francisco, Oct. 29-Nov. 2 |
| Radium Society | Edith H. Cowan, Salt Lake City | John Wirth, U. S. Marine Hosp., Baltimore | |
| Rheumatism Association | Otto Steinbrocker, New York | Charles Ragan, 620 West 168th Street, New York 32, N. Y. | |
| Roentgen Ray Society | Bernard P. Widmann, Philadelphia | Barton R. Young, Germantown Hosp., Philadelphia 44 | Washington, D. C., Sept. 25-28 |
| Society for Clinical Investigation | Eugene B. Ferris, Cincinnati | Paul B. Beeson, Grady Hosp., Atlanta 3, Ga. | |
| Society for Experimental Pathology | James F. Rinehart, San Francisco | Sidney C. Madden, Brookhaven Nat'l Lab., Upton, L. I., N.Y. | |
| Society for Pharm. and Ex. Ther., Inc. | Carl F. Schmidt, Philadelphia | H. B. Haag, Medical College of Va., Richmond 19 | |
| Society of Anesthesiologists | Urban H. Eversole, Boston | J. E. Remlinger Jr., 188 W. Randolph St., Chicago | Washington, D. C., Nov. 5-8 |
| Society of Biological Chemists | H. B. Vickery, New Haven, Conn. | E. H. Stotz, U. of Rochester School of Med., Rochester 7, N. Y. | |
| Society of Clinical Pathologists | F. Wm. Sunderman, Atlanta, Ga. | C. G. Culbertson, 1040 W. Michigan St., Indianapolis 7 | Chicago, Oct. 13-20 |
| Society of Tropical Medicine | Paul F. Russell, New York | Quentin M. Geiman, 25 Shattuck St., Boston 15 | |
| Surgical Association | Samuel C. Harvey, New Haven, Conn. | Nathan Womack, University Hospitals, Iowa City | |
| Therapeutic Society | James A. Lyon, Washington, D. C. | O. B. Hunter, 515 19th St., N.W., Washington, D. C. | |
| Urological Association | Thomas D. Moore, Memphis, Tenn. | C. H. deT. Shivers, Bidwalk Nat'l Arcade Bldg., Atlantic City | |
| Assn. for the Study of Int. Secretions | E. H. Rynearson, Rochester, Minn. | H. H. Turner, 1200 N. Walker St., Oklahoma City | |
| Association of American Medical Colleges | Arthur C. Bachmeyer, Chicago | Dean F. Smiley, 185 N. Wabash Ave., Chicago | French Lick, Ind., Oct. 29-31 |
| Association of American Physicians | O. H. Robertson, Chicago | H. M. Thomas Jr., 1201 N. Calvert St., Baltimore 2 | Atlantic City, May 6-7 |
| Association of Military Surgeons of U. S. | Robert C. Cook, Washington, D. C. | J. M. Phalen, Armed Forces Inst. of Path., Washington 25 | Chicago, Oct. 8-10 |
| Assn. of State & Territorial Health Officers | Roy L. Cleere, Denver | John D. Porterfield, 306 Ohio Depts. Bldg., Columbus 15, O. | Washington, D. C., 1951 |
| Central Surgical Association | B. Noland Carter, Cincinnati | James T. Priestley, Mayo Clinic, Rochester, Minn. | Toronto, Can., March 6-8 |
| College of American Pathologists | F. H. Lamb, Davenport, Iowa | M. G. Westmoreland, 203 N. Wabash Ave., Chicago 1 | Chicago, Oct. 15-18 |
| Medical Library Association | Miss Marjorie J. Darrach, Detroit | Miss Caroline Riechers, 1758 W. Harrison St., Chicago 12 | Denver, June 28-30 |
| National Medical Association | H. H. Walker, Nashville, Tenn. | John T. Givens, 1108 Church St., Norfolk 10, Va. | Philadelphia, Aug. 20-24 |
| National Tuberculosis Association | David T. Smith, Durham, N. C. | H. Stuart Willis, 1790 Broadway, New York 19 | |
| Radiological Society of North America | John S. Bousley, Denver | D. S. Childs, 713 E. Genesee St., Syracuse 2, N. Y. | Chicago, Dec. 3-7 |
| Society of American Bacteriologists | W. J. Nungester, Ann Arbor, Mich. | John E. Blair, 1919 Madison Ave., New York 35 | |
| Southern Medical Association | Curtice Rosser, Dallas, Texas | Mr. C. P. Loyd, Empire Bldg., Birmingham 3, Ala. | Dallas, Texas, Nov. 5-8 |
| Southern Surgical Association | Frank C. Wilson, Birmingham, Ala. | John C. Burch, 2112 West End Ave., Nashville 5, Tenn. | Hot Springs, Va., Dec. 4-6 |
| U. S. Chapter, Internat'l Coll. of Surgeons | H. W. Meyerding, Rochester, Minn. | Arnold S. Jackson, 1516 Lake Shore Dr., Chicago | Chicago, Sept. 10-14 |
| Western Surgical Association | Erwin R. Schmidt, Madison, Wis. | Michael Mason, 154 E. Erie St., Chicago | Colorado Spgs., Nov. 29-Dec. 1 |

V 146
1951


new and different salt substitute

*...tastes like salt*
*looks like salt*
*sprinkles like salt*

co-salt IN congestive heart failure, hypertension, toxemias of pregnancy

CO-SALT tastes so much like table salt that patients on low sodium diets can actually enjoy their food again. With CO-SALT in place of sodium chloride, they will cooperate more fully in following your diet ... will be better nourished ... and intake of edema-causing sodium will be held to a minimum.

CO-SALT CONTAINS NO LITHIUM ... is not bitter, metallic, or disagreeable in taste ... for use at the table or in cooking.

INGREDIENTS: Choline, potassium chloride, ammonium chloride and tri-calcium phosphate.

Professional Samples Upon Request
Available: 2 oz. shaker top package
8 oz. economy package

Casimir Funk Laboratories, Inc.
affiliate of U. S. VITAMIN CORPORATION
250 E. 43rd St. • New York 17, N. Y.

146
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In the selection
of an antibiotic
for pediatric patients...
*effective oral administration*
*wide range of activity*
*and low toxicity*
are decisive factors*

CRYSTALLINE

# Terramycin

HYDROCHLORIDE

Terramycin is rapidly absorbed following oral administration, effective against organisms of the bacterial and rickettsial as well as several protozoan groups, and free of serious side-reactions.

In a recent study encompassing 62 pediatric cases, Terramycin, given by mouth, proved an effective therapeutic agent against respiratory infections due to D. pneumoniae, Staph. aureus, H. influenzae, and beta hemolytic streptococci. Prompt, favorable response was noted in lobar pneumonia, bronchopneumonia, otitis media, tonsillitis, sinusitis, and laryngotracheobronchitis. No serious toxic manifestations were noted, and it was concluded that Terramycin satisfies the criteria for selection of an antibiotic in the infections studied.*

***Crystalline Terramycin Hydrochloride is available as:***

CAPSULES, 250 mg., bottles of 16 and 100; 100 mg., bottles of 25 and 100; 50 mg., bottles of 25 and 100;

ELIXIR (formerly Terrabon), 1.5 Gm. with 1 fl. oz. of diluent;

INTRAVENOUS, 10 cc. vial, 250 mg.; 20 cc. vial, 500 mg.;

OPHTHALMIC OINTMENT, 1 mg. per Gm. ointment; tubes of ⅛ oz.;

OPHTHALMIC SOLUTION, 5 cc. dropper-vials, 25 mg. for preparation of topical solutions.

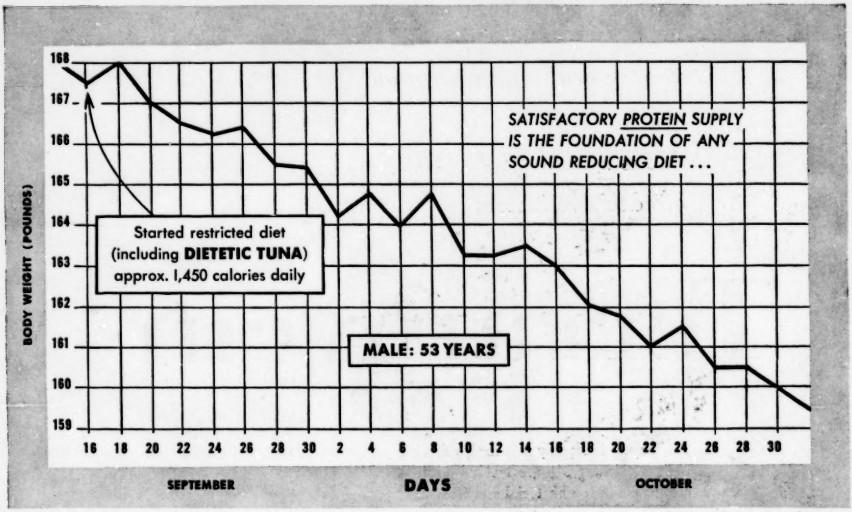
*Potterfield, T. G., and Starkweather, G. A.: J. Philadelphia General Hospital 2:6 (Jan.) 1951.

*Antibiotic Divison* Pfizer CHAS. PFIZER & CO., INC., *Brooklyn 6, N.Y.*

1941 A DECADE OF PROGRESS IN ANTIBIOTIC THERAPY 1951

# Dietetic Tuna—

## ADDS NEW ZEST AND FLAVOR TO REDUCING DIETS




Adequate protein supply is the foundation of all sound reducing diets. Dietetic Tuna is high in protein—adaptable to many uses, both Hot and Cold.

In the processing, most of the oil has been removed to make this an ideal basic food for reducing diets.

In addition, DIETETIC TUNA is low in sodium, fat, and cholesterol, important factors in many diets.

DIETETIC TUNA may well be of unusual value in answering the question of patients on reducing or other special diets, "But, Doctor, what CAN I eat?"

*A request on professional stationery to Dept. AMA will bring samples and bulletins.*

**TYPICAL** average composition of drained contents

| | |
|---|---|
| Total solids | 30.6% |
| Protein | 28.3% |
| Fat | 0.75% |
| Cholesterol | .07% |
| Sodium | 70 mg.% |
| Iodine | 17 mcg.% |
| Fluorine | 20 ppm |
| Riboflavin | 116 mcg.% |
| Niacin | 13.7 mg.% |
| Animal Protein Factor ($B_{12}$) | 12 mcg.% |

(122 calories per 100 grams)

**WELL PROPORTIONED** combination of all essential amino acids (Values given as percent of protein)

| | |
|---|---|
| Arginine | 5.2 |
| Histidine | 5.7 |
| Isoleucine | 4.7 |
| Leucine | 7.0 |
| Lysine | 8.3 |
| Methionine | 2.8 |
| Phenylalanine | 3.5 |
| Threonine | 4.1 |
| Tryptophan | 1.1 |
| Valine | 5.2 |

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

**VAN CAMP LABORATORIES**

Division of Van Camp Sea Food Co., Inc.
Terminal Island, California

V 146
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# A COMPARATIVE STUDY

## THE EFFICACY OF THE SUPPOSITORY FOR CONCEPTION CONTROL

"... surely mass studies on the diaphragm have not shown greater efficacy than is reported in this paper by simpler procedures."*

***Lorophyn® Suppositories (N.N.R.) contain phenylmercuric acetate 0.05% and glyceryl laurate 10% in a water-dispersible, self-emulsifying, synthetic wax base. Hermetically sealed in foil, they will not leak in hot weather.***

**The Baltimore Study.**

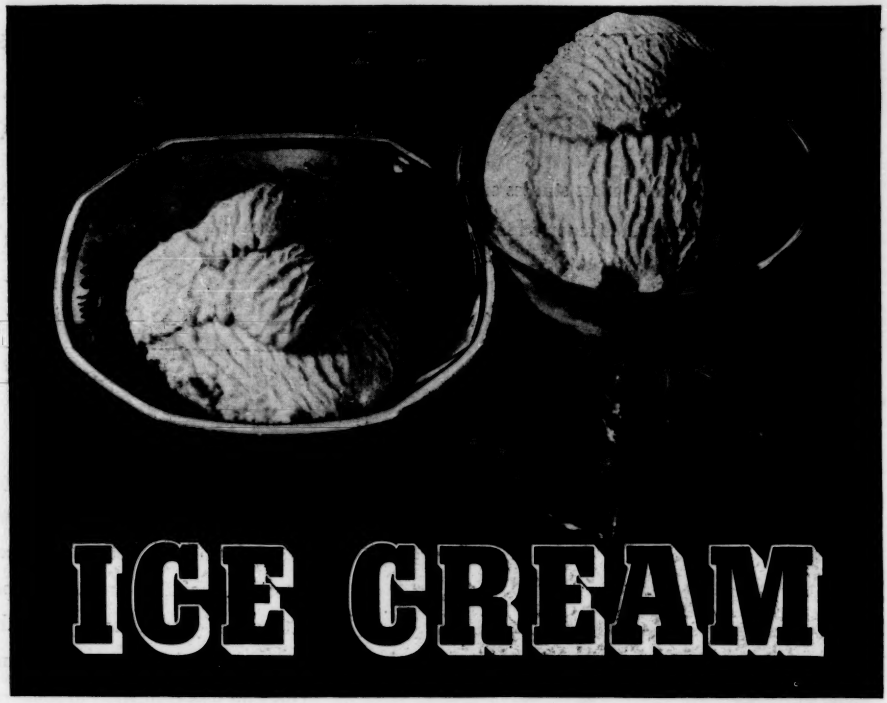
Studies of the efficacy of Lorophyn Suppositories in a Baltimore clinic revealed that this method produced a total rate of *16.2* pregnancies per 100 woman-years of exposure to the opportunity of becoming pregnant. This rate was compared to some reported in the literature with diaphragm and jelly: 12, 15, 18 and 33.

**The South Carolina Study.**

In State post-natal and syphilis clinics, the effectiveness of the simple Lorophyn Suppository technic was found to be comparable to the Baltimore results.

EATON LABORATORIES, INC., NORWICH, N. Y.

*Eastman, N. J. & Seibels, R. E.: *The Efficacy of the Suppository and of Jelly Alone as Contraceptive Agents*, J. A. M. A. **139**:16 (Jan. 1) 1949. **Reprint on request.**




V 146
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# *a nutritious food for young and old*

Ice cream serves as a means of increasing the intake of essential nutrients of milk in the diets of children and adults.

Actual analyses were made on ice cream prepared from a formula which was taken to be an average vanilla ice cream mix.* Approximately eighty percent, by weight, of this ice cream mix was composed of cream and milk products. As a result, the ice cream contained significant amounts of protein, calcium, vitamin A, and riboflavin. One average serving of such ice cream (¼ quart) provides the same amount of calcium and high quality protein as one-half glass of milk.

Children enjoy ice cream as a regular part of their daily meals. In a study conducted for a year in a boarding school, children were served generous dishes of ice cream twice weekly.** Inclusion of the ice cream made a notable contribution to the total nutrient intake of the children and had no adverse effect on the quantities of other foods consumed.

Adults who do not customarily drink milk add significant amounts of milk nutrients to their meals by regular use of ice cream. Aging persons who omit foods difficult to prepare or to eat find ice cream a nutritious, satisfying addition to meals.

*Dahlberg, A. C. and Locali, J. K. *Nutritive value of commercial ice cream.* J. Am. Diet. Assn. 24:20 (Jan.) 1948

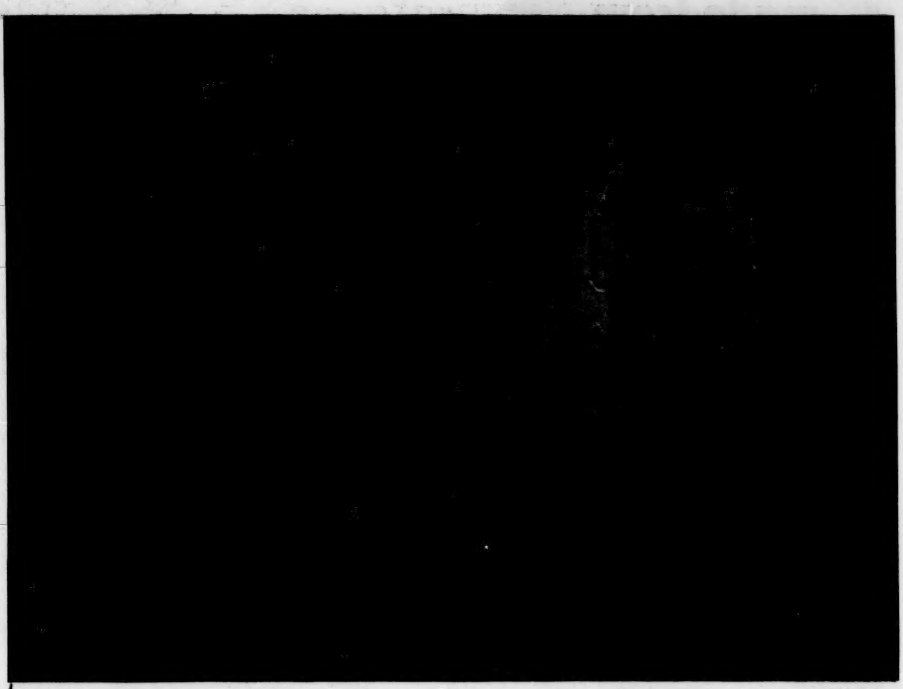
**Roberts, L. J., Blair, R., et al. *Results of providing a liberally adequate diet to children in an institution.* J. Pediatrics 27:393:410:418 (Nov.) 1945

The presence of this seal indicates that all nutrition statements in the advertisement have been found acceptable by the Council on Foods and Nutrition of the American Medical Association.

ACCEPTED COUNCIL ON FOODS AND NUTRITION AMERICAN MEDICAL ASSOCIATION

National DAIRY COUNCIL
111 North Canal Street Chicago 6, Illinois

*Since 1915 . . . the National Dairy Council, a non-profit organization, has been devoted to nutrition research and education to extend the use of dairy products.*



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## "*Breadth* of life as well as length" for your depressed aged patients

Mental depression is a particularly grave portent in the aged.
It threatens happiness, health and even life.

'Benzedrine' Sulfate is frequently highly beneficial in these patients.
Its dramatic mood effect helps revive the feeling of belonging,
of still being a part of things: a state of mind
essential to the morale and longevity of the elderly.

Arnett and Harris†, after conclusive tests with 'Benzedrine' in
patients up to 91 years of age, found no harmful effect,
no habituation and a minimum of sleeplessness and nervousness.
Obviously, 'Benzedrine' Sulfate should be used with caution
in the presence of cardiovascular disease or hypertension.

†Arnett, J. H., and Harris, S. E.: Geriatrics 3:84, 1948.

*Smith, Kline & French Laboratories, Philadelphia*

# Benzedrine* Sulfate, N. N. R.

*T.M. Reg. U.S. Pat. Off. for racemic amphetamine sulfate, S.K.F.

**one of the fundamental drugs in medicine**

**made from bovine plasma**

. . . an *excellent* source material

# Travamin*

In cases where the doctor finds it necessary or advantageous to satisfy the patient's protein needs by the parenteral route, he will find TRAVAMIN to be a highly satisfactory product. The proteins in beef plasma are enzymically digested to free amino acids and polypeptides.

TRAVAMIN is nutritious, and can be relied upon to satisfy the complete protein needs of the patient. It is readily assimilable. The recommended rate of infusion has been established at 1000 cc. in 1 to 1½ hours for an average adult patient.

***Available With or Without Dextrose***
5% Plasma Hydrolysate w/v in Water
5% Plasma Hydrolysate w/v and 5% Dextrose w/v in Water

**formerly Protein Hydrolysate, Baxter*

Products of
**BAXTER LABORATORIES, Inc.**
**Morton Grove, Illinois**

DISTRIBUTED AND AVAILABLE ONLY IN THE 37 STATES EAST OF THE ROCKIES (except in the city of El Paso, Texas) THROUGH

**AMERICAN HOSPITAL SUPPLY CORPORATION**
GENERAL OFFICES • EVANSTON, ILLINOIS

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d by Jan Balet

IOW CAN YOU *Reform a pastry push-over...*

# . . . when she has to live with temptation

Painted by Jon Eakes

. . . AT THIS POINT physician and patient alike welcome the aid of an effective anorexic and mood-improver such as Desoxyn Hydrochloride.

With Desoxyn, smaller dosage is possible because, weight for weight, it is more potent than other sympathomimetic amines.

One 2.5 or 5 mg. tablet before breakfast and another about noon have patient again very usually well-prepared. With Desoxyn side effects are a less incidental problem; others, plus fluid retention and impotence often associated with other sympathomimetic amines.

by Dr. Abbott

*Prescribe*

**Desoxyn®**
**HYDROCHLORIDE**

(METHAMPHETAMINE HYDROCHLORIDE, ABBOTT)

For low-calorie diets, suggest
**SUCARYL® SODIUM**
Abbott's new heat-stable, non-caloric sweetener
®CYCLAMATE, ABBOTT

**TABLETS** 2.5 and 5 mg.
**ELIXIR** 2.5 mg. per fluidrachm
**AMPOULES** 20 mg. per cc.

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MONILIAL VAGINITIS

CUTANEOUS MONILIASIS

MONILIAL STOMATITIS (THRUSH)

MONILIAL PRURITUS ANI

WHICH IS *Your* PROBLEM?

TINEA CORPORIS

AN EFFECTIVE *Answer*

# Naprylate

***BRAND OF CAPRYLIC COMPOUND***

TINEA PEDIS

In Monilial Stomatitis (THRUSH), for example, Naprylate Ointment or Sodium Caprylate Solution may be applied directly. In Monilial Vaginitis, Naprylate Powder and Suppositories team up to effect a convenient and rapid cure. And these are just a few of the many superficial fungus infections that respond quickly and safely to the varied dosage forms of Naprylate or to Sodium Caprylate Solution.

Naprylate embodies the sodium and zinc salts of caprylic acid, utilizing the latest development in fatty acid therapy. Write to Medical Service Department, R. J. Strasenburgh Co., Rochester 14, New York for literature and complimentary supply.

TINEA VERSICOLOR

**NAPRYLATE** *Ointment*
¾ oz. Tubes, 1 lb. Jars

**NAPRYLATE** *Powder*
1¼ oz. "Plastiflex" Squeeze Bottle

**NAPRYLATE** *Suppositories*
Encapsulated in Rx Package of 12 in Sani-Tape Strips

**SODIUM CAPRYLATE** *Solution (20%)*
2 oz., 16 oz., 1 gal.

TINEA CRURIS

Strasenburgh
FOUNDED IN 1886

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

# "Anxiety states in the older age groups...

appeared to respond well to small doses of the sedative...

"Because of its mild and relatively prolonged action, butabarbital sodium proved particularly useful in the field of daytime sedation and 'delayed' hypnosis."[1]

# Butisol® Sodium

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Where a gentle type of sedation without mental confusion or "fogginess" is desired—to carry the patient through days free of hyperexcitability and tension—Butisol Sodium can be depended upon to provide just the degree of sedation you wish to prescribe.

"The mild relatively prolonged action of the drug makes it suitable for management of many functional disorders and for the treatment of the nervous tension and anxiety associated with certain organic diseases, such as hyperthyroidism, peptic ulcer, hypertension, spastic colon and ulcerative colitis."[1]

Butisol is not contraindicated in the presence of renal disease.[2]

Available in a wide variety of dosage forms—adjustable to keep each individual's requirements under your control:

**DOSAGE FORMS...**

Elixir Butisol Sodium, 0.2 Gm. (3 gr.) per 30 cc. (fl. oz.), green.
Tablets, 15 mg. (¼ gr.), lavender.
Tablets, 30 mg. (½ gr.), green.
Tablets, 50 mg. (¾ gr.) orange.
Tablets, 0.1 Gm. (1½ gr.), pink.
Capsules, 0.1 Gm. (1½ gr.), lavender.

1. Dripps, R.D.: Selective Utilization of Barbiturates, J.A.M.A. *139:* 148-150 (Jan. 15) 1949.

2. Council on Pharmacy & Chemistry: New and Nonofficial Remedies, 1950, Philadelphia, J.B. Lippincott Co., 1950, p. 395.

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1

ELIXIR
BUTISOL® SODIUM
McNEIL

Its bright, green color and refreshing flavor appeal to all; excellent prescription vehicle. Clinical samples on request.

ACCEPTED
COUNCIL ON PHARMACY AND CHEMISTRY
AMERICAN MEDICAL ASSOCIATION

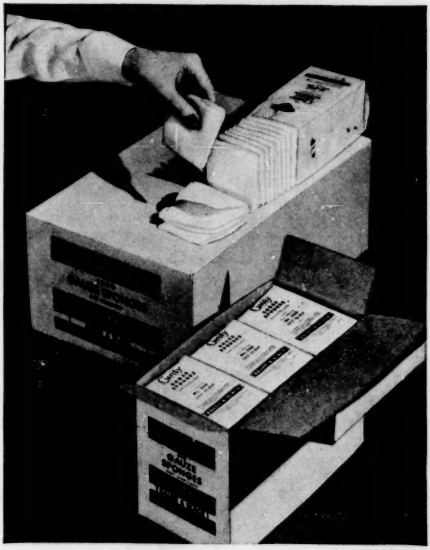
McNEIL LABORATORIES, INC., PHILADELPHIA 32, PA.

A Curity PRODUCT

BAUER & BLACK

# Office-Size DOCTOR-PACKS of Curity Gauze SPONGES

***Now in two convenient packages... 3" x 3" all-gauze sponges***



300's . . . 6 sealed bags . . . 50 sponges each
1000's . . . 10 sealed bags . . . 100 sponges each

Designed especially for *your* office use, these *Curity* Doctor-Packs of Gauze Sponges offer these advantages:

1. Bags of sponges are better protected against dust and dirt by sturdy cardboard containers. Unopened bags of sponges stay clean in the box.
2. Boxes fit neatly into drawers and cabinets.
3. Much less expensive than individually wrapped and sterilized sponges.
4. Contents of individual bag of 50 sponges (in Doctor-Packs of 300's) fit into a sundry jar.

*Curity* Sponges . . . 3" x 3" size, 12 ply . . . are clean, soft, absorbent, uniformly made by machine, no loose threads, all edges tucked in.

See your dealer representative about these famous sponges in the packages made especially for you—in Doctor-Packs of 300 and 1000.

Curity

## DRESSINGS IN DOCTOR-PACKS

BAUER & BLACK
Division of The Kendall Company

V 146
1951

# Special formula products of wide interest to physicians

To aid in solving the perplexing infant feeding problems encountered in daily practice. Literature, including formula tables, available on request.

MEADS

MEAD JOHNSON & CO.
EVANSVILLE 21, IND., U. S. A.

Alacta*—Powdered half-skim milk, for use when fat tolerance is low or gastric emptying prolonged, as in hot weather or during bouts of infectious disease. An outstanding milk product for prematures.

Casec*—A concentrated (88%) protein supplement highly useful in dietary management of diarrhea and colic. Valuable for increasing the protein content of the formula or diet.

Mead's Powdered Lactic Acid Milk No. 2—Acidified whole milk. Valuable when a milk of exceptional digestibility is indicated, as for malnourished or undernourished infants and in certain digestive disorders.

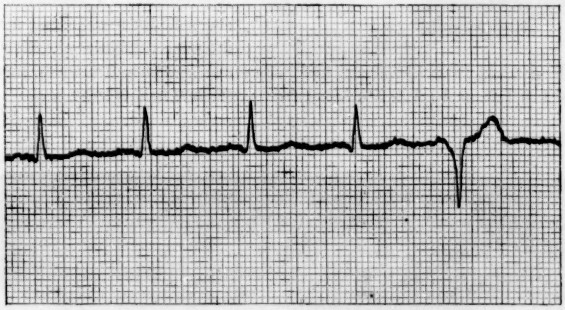
Mead's Powdered Protein Milk—Powdered lactic acid milk of high protein, low carbohydrate and average fat content. Highly useful in celiac disease and in diarrhea.

Nutramigen*—A nutritionally adequate truly hypoallergenic food—containing a nonantigenic casein hydrolysate combined with carbohydrate, fat, minerals and crystalline B vitamins. Invaluable for infants sensitive to milk or other foods.

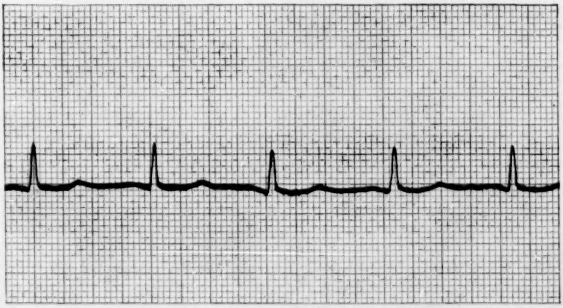
*T.M. Reg. U.S. Pat. Off.

# *a significant advance in the treatment of ventricular arrhythmias . . . .*

**Oral PRONESTYL**
**in ventricular premature contractions**



Lead I. Control tracing, ventricular premature contraction.



Lead I. Tracing one week later; patient maintained on 2 Gm. Pronestyl per day. Normal sinus rhythm.

V 146
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# ....PRONESTYL *Hydrochloride*

## *less toxic than quinidine*

### Indications and Dosage

IN CONSCIOUS PATIENTS

*For the treatment of ventricular tachycardia:*

*Orally:* 1 Gm. (4 capsules) followed by 0.5-1.0 Gm. (2 to 4 capsules) every four to six hours as indicated.

*Intravenously:* 200-1000 mg. (2 to 10 cc.). *Caution*—administer no more than 200 mg. (2 cc.) per minute.

Hypotension may occur during intravenous use in conscious patients. As a precautionary measure, administer at a rate no greater than 200 mg. (2 cc.) per minute to a total of no more than 1 Gm. Electrocardiographic tracings should be made during injection so that injection may be discontinued when tachycardia is interrupted. Blood pressure recordings should be made frequently during injection. *If marked hypotension occurs, rate of injection should be slowed or stopped.*

*For the treatment of runs of ventricular extrasystoles:*

*Orally:* 0.5 Gm. (2 capsules) every four to six hours as indicated.

IN ANESTHESIA

*During anesthesia, to correct ventricular arrhythmias:*

*Intravenously:* 100-500 mg. (1 to 5 cc.). *Caution*—administer no more than 200 mg. (2 cc.) per minute.

### Supply

Pronestyl Hydrochloride Capsules, 0.25 Gm., bottles of 100 and 1000.
Pronestyl Hydrochloride Solution, 100 mg. per cc., 10 cc. vials.

# PRONESTYL *Hydrochloride*

SQUIBB PROCAINE AMIDE HYDROCHLORIDE

"PRONESTYL" IS A TRADEMARK OF E. R. SQUIBB & SONS

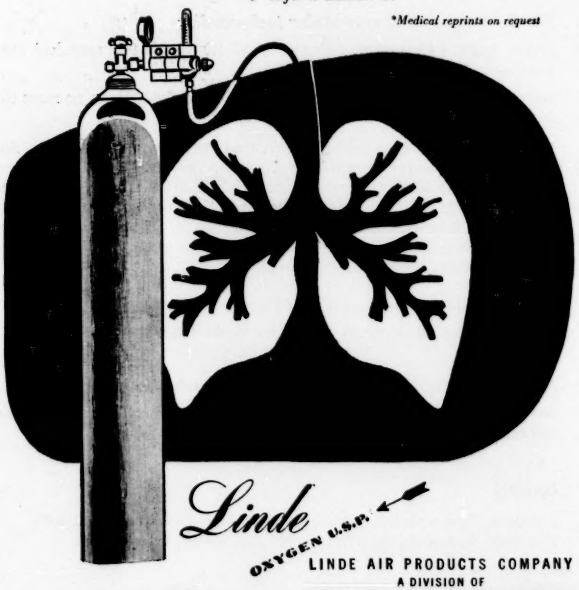
SQUIBB

## When the lungs don't function properly . . .

*tissues may not receive adequate oxygen. Oxygen therapy helps the lungs* deliver a more nearly adequate supply of oxygen to the blood and tissues.* ▶ *Ask to be put on the list to receive the* OXYGEN THERAPY NEWS, *Linde's monthly abstract publication for physicians interested in oxygen therapy.*

▶ *Refer to Bulletin G.*

**Medical reprints on request*



Linde OXYGEN U.S.P.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF
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30 East 42nd Street UCC New York 17, N. Y.
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The term "Linde" is a trade-mark of Union Carbide and Carbon Corporation


V 146
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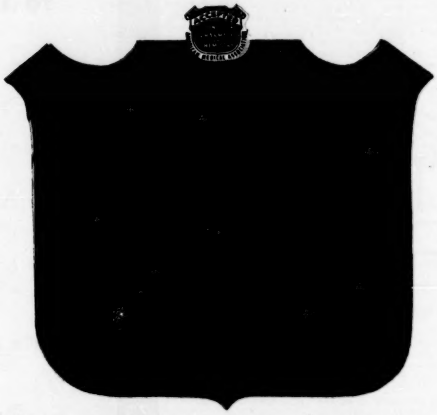
# Now Council-Accepted

*An effective, relatively safe obstetric analgesic*



Published reports on favorable results in many thousands of deliveries, as well as countless unpublished cases, have established "Heavy Solution" Nupercaine® as an obstetric analgesic of wide preference. Notable features of this Council-Accepted saddle-block anesthetic are high effectiveness and relative safety.

An illustrated booklet describing the technic of saddle-block anesthesia with "Heavy Solution" Nupercaine is available on request.

Issued: "Heavy Solution" Nupercaine, 2 cc. ampuls in cartons of ten. Sales limited to hospitals.

2/1664M

## "Heavy Solution" Nupercaine

**Nupercaine (dibucaine) hydrochloride 0.25% with dextrose 5%**

**Ciba** PHARMACEUTICAL PRODUCTS, INC., SUMMIT, N. J.

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a

# Challenge

to the

Medical

Profession

**Doctors must set the pace to insure adequate training for Physicians of the future**

. . . other strong forces in American Society are ready to help

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America's medical schools need *your* aid. If they are to withstand successfully the effects of rising costs, reduced income from endowments and fewer large individual gifts, medical schools need voluntary financial assistance from *every physician* in the nation.

Strong new forces representing many important groups in American society . . . including business, industry, agriculture and labor . . . have pledged their efforts to raise unrestricted funds for medical education. Organized as the National Fund for Medical Education,* these forces have set a goal of $5,000,000 to be raised in 1951 . . . enough to help medical schools solve many of their most serious problems.

*Editorial: The National Fund for Medical Education and the American Medical Education Foundation, J.A.M.A.: 146: p. 258 (May 19) 1951.

**AMERICAN MEDICAL EDUCATION**

# the challenge

The American Medical Education Foundation has announced it will merge contributions with those of the National Fund. So a new *challenge* is born. Physicians *now* must set a pace that will be a stimulus and an example to the many other groups uniting for this important undertaking. By personal contributions to the American Medical Education Foundation, physicians can demonstrate that they will do their part to insure adequate training for physicians of the future.

Remember, too, physicians may designate specific schools for their contributions. Schools will be informed of the names of contributors . . . and amounts contributed . . . when grants are made.

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# physicians goal
## $1,000,000

The goal has been set. In 1951, physicians are being asked to contribute a minimum of $1,000,000 to the American Medical Education Foundation. Funds already contributed . . . including $500,000 appropriated by the American Medical Association . . . have brought this goal within reach.

Doctors should continue to make individual contributions to the American Medical Education Foundation. Lump sums will regularly be turned over to the National Fund for Medical Education to swell the total amount available for voluntary aid to medical schools.

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AMERICAN MEDICAL EDUCATION FOUNDATION
535 North Dearborn St., Chicago 10, Ill.

I enclose my check for $..... as my contribution to the 1951 fund of the American Medicial Education Foundation.

NAME .....

ADDRESS .....

..... (*if desired, designate school*)

*Please make checks payable to the American Medical Education Foundation*

**THIOMERIN® SODIUM is now a WYETH product!**

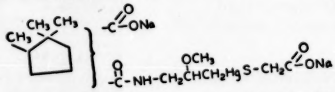
# Council on Pharmacy and Chemistry

## NEW AND NONOFFICIAL REMEDIES

*The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.*

R. T. Stormont, M.D., *Secretary.*

**MERCAPTOMERIN SODIUM.—Thiomerin Sodium** (Campbell Pharmaceutical Co.).—Disodium salt of N(γ-[illegible]boxymethylmercaptomercuri-β-methoxy)propyl-camphoramic acid. [illegible]. 606.03. — The structural formula of mercaptomerin sodium may be represented as follows:



*Actions and Uses.*—Mercaptomerin sodium is an effective mercurial diuretic which produces much less local irritation on injection than other organo-mercurial compounds used for this purpose. It is also less toxic to the heart than the previously employed mercurial diuretics. It shares the other actions of these compounds and likewise manifests the potential toxic effects of mercury. Preliminary acidification of the urine also sometimes enhances its diuretic effect. See the general statement on Mercury Compounds.

Mercaptomerin sodium is contraindicated in advanced chronic nephritis and acute renal disease and care must be taken in its use with drastic sodium chloride restriction to avoid salt depletion from copious diuresis.

Dose [illegible]

V 146
1951

**WYETH**
**INCORPORATED**
1401 WALNUT STREET • PHILADELPHIA 2, PA.

OFFICE OF THE PRESIDENT

May, 1951

THIOMERIN® SODIUM

is now a WYETH preparation

Dear Doctor:

The new and superior mercurial diuretic, Thiomerin Sodium, originally developed by the Campbell Pharmaceutical Company, will henceforth be manufactured and sold by WYETH. This outstanding preparation has rapidly gained widespread preference among physicians.

Wyeth's extensive facilities and services are now making available adequate supplies of Thiomerin Sodium of the highest purity and uniform potency. Pioneering the development in America of pure crystalline digitoxin (Purodigin®) and as sponsors of its extensive clinical investigation, Wyeth is especially pleased to add Thiomerin Sodium to its group of therapeutic agents of primary value in the field of cardiac therapy.

Extensive clinical trials have shown Thiomerin Sodium to be singularly safe and potent, and on the basis of animal experiments it has been demonstrated to be 160 to 200 times less toxic to the heart than other mercurial diuretics. It is so well tolerated locally that it can be safely and effectively administered by subcutaneous injection.

Sincerely yours,

H. S. Howard

HSH:MS

P.S. Your Wyeth Representative is now prepared to supply you with literature and reprints on the clinical use of Thiomerin Sodium. Please continue to direct inquiries regarding all other Campbell products to the Campbell Pharmaceutical Company.

Wyeth®

Wyeth Incorporated • Philadelphia 2, Pa. Wyeth®

# Equilibrium and Equanimity

● Today, the woman in a turbulent menopause expects the general practitioner to set her physical and psychical equilibrium aright. She is not unreasonable in this, as the newer aids available so often prove.

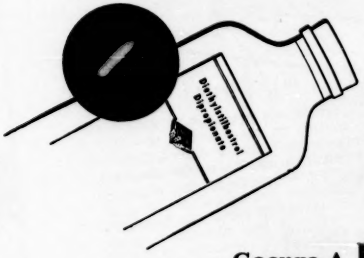
Diethylstilbestrol Dipropionate-Breon is graced by an estrogenic action that *glides*. In selected dosage it is customarily free from awkward, interfering effects.

Because of this smooth course as well as for the convenience of oral administration and economy the Caplets are readily patient-accepted when waning endogenous estrogen brings endocrine instability.

Then, in

## Diethylstilbestrol Dipropionate-Breon

the physician may be said to be prescribing equilibrium for the patient and equanimity for himself!




The vari-colored Caplets come in 0.2 mg. (green), 0.5 mg. brown and 1.0 mg. (blue). For other uses there is also 5.0 mg. (gray).

George A. Breon & Company
1450 BROADWAY, NEW YORK 18, N. Y

ATLANTA
CHICAGO
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1951

*Broadly useful and readily tolerated, this sulfonamide has been pre-eminent in chemotherapy throughout the world for the past decade*

# SULFADIAZINE

## *in Uruguay*

The early experimental and clinical work on the sulfonamides in North America and Europe and that of Laca and Porzecanski in Uruguay was followed with keen interest by Uruguayan physicians. This interest and the recognition of the superiority of sulfadiazine as an effective sulfonamide are reflected in the articles on the therapeutic action of this drug which have appeared in the medical journals of Uruguay since 1942. As in similar papers which have appeared in the United States, the authors have been in agreement as to the great usefulness of sulfadiazine in a wide variety of infections.

**Powder U.S.P. (Not Sterilized):** ¼ pound and 1 pound.
**Tablets:** Bottles of 100 and 1,000, 0.5 Gm. (7.7 grains).
**Solution Sodium Sulfadiazine:** 6, 25 and 100 ampuls of 10 cc., 0.25 Gm. per cc.

LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY 30 Rockefeller Plaza, New York 20, N.Y.

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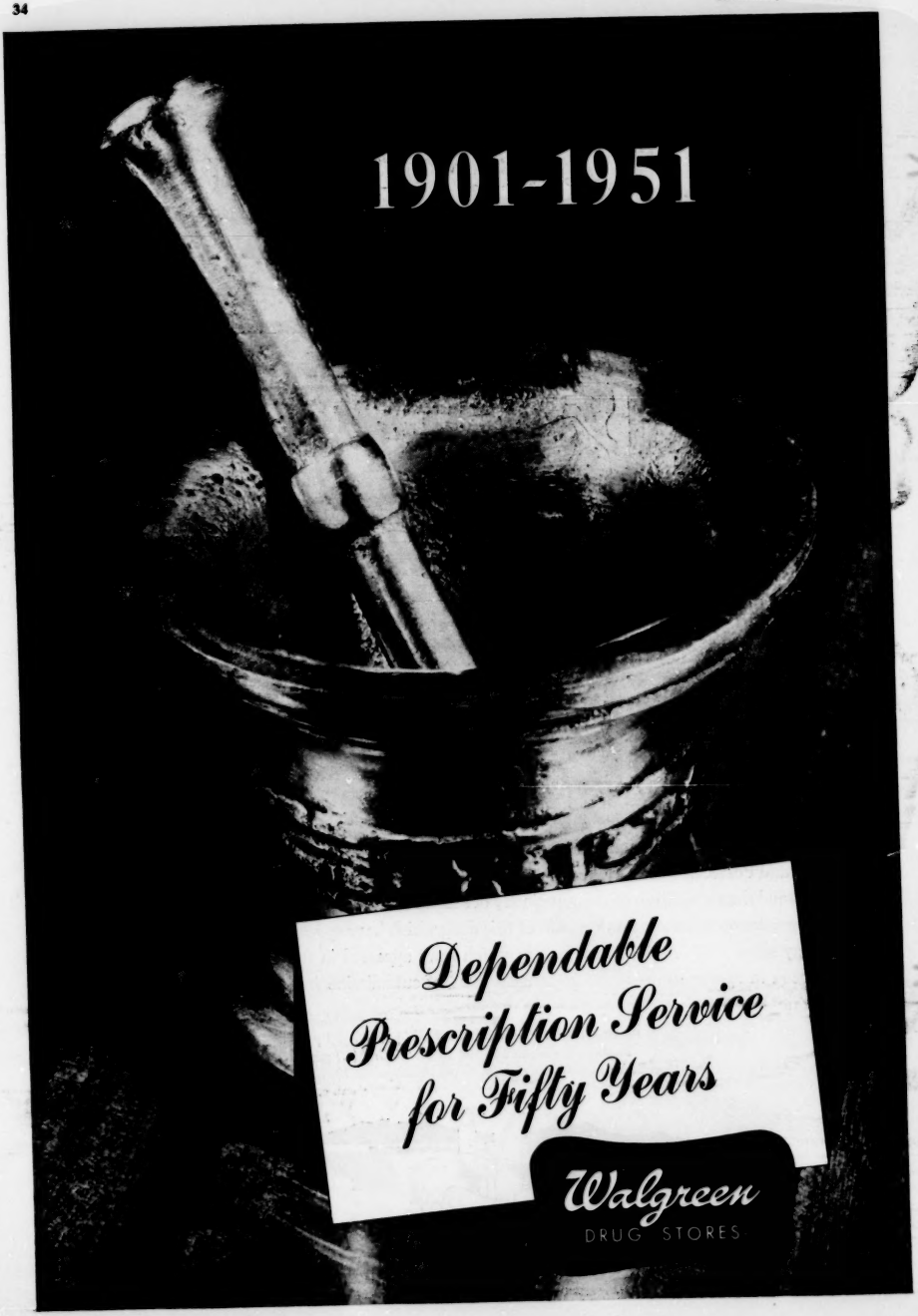
1951


1901-1951
Dependable
Prescription Service
for Fifty Years
Walgreen
DRUG STORES

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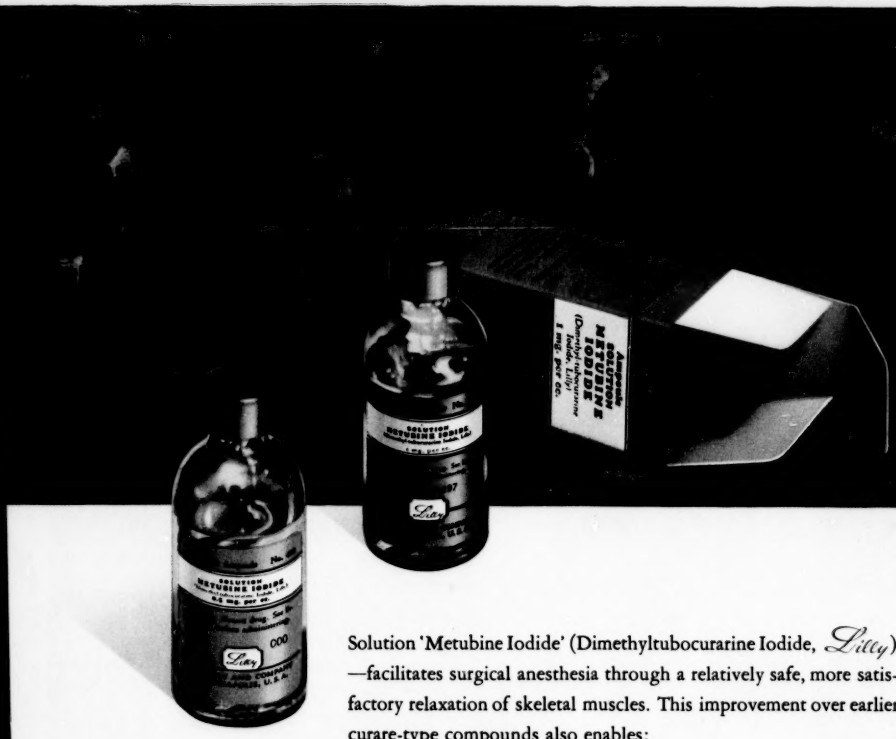
**Surgery Is Facilitated**

***When Anesthesia Is Improved***




Solution 'Metubine Iodide' (Dimethyltubocurarine Iodide, *Lilly*) —facilitates surgical anesthesia through a relatively safe, more satisfactory relaxation of skeletal muscles. This improvement over earlier curare-type compounds also enables:

Easy Manipulation (*Less Motion of Surgical Field*)

Quick Recovery (*Less Postoperative Disturbance*)

**Request Solution METUBINE IODIDE**

Detailed information and literature on Solution METUBINE IODIDE are personally supplied by your Lilly medical service representative or may be obtained by writing to Eli Lilly and Company, Indianapolis 6, Indiana, U.S.A.

*Lilly*

SINCE 1876

## Mauve to golden

LILLY SINCE 1876

The Mauve Decade was purpled by a youthful chemist named Perkin who sought to synthesize quinine but found instead the first, and quickly popular, coal-tar dye. The once-royal color became common as the nineteenth century ended and heralded a new and golden era in which chemistry was to reign. Alert to the suddenly increased significance of chemical investigation, young Josiah Lilly promptly installed an analytical laboratory in the company founded by his father just ten years before. This early Scientific Division, like today's, was to maintain standards for the control of quality and to search for the new. Readiness to make changes, to adjust to changing conditions, is the healthy response which is spurred by discovery in the free American economy. Progress is the common benefit.

V 146
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*A 15" x 12" reproduction of this illustration by Paul Rabut is available upon request.*

Lilly

ELI LILLY AND COMPANY · INDIANAPOLIS 6, INDIANA, U.S.A.

THE JOURNAL
of the American Medical Association
*Published Under the Auspices of the Board of Trustees*

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# THE STATURE OF AMERICAN MEDICINE 1951

## PRESIDENT'S ADDRESS

*John W. Cline, M.D., San Francisco*

The American Medical Association was founded 104 years ago, to improve medical education and elevate the standards of medical care. Throughout its history these have remained its major objectives. Except for a few war years, the Association has held an annual session, and the 100th meeting is now taking place in Atlantic City. The medical welfare of the people of our country is entrusted largely to the medical profession. Current health conditions and medical progress will be reported at this meeting and, by way of the press, radio and other media, will be transmitted to the nation.

It is a great privilege to address my colleagues here assembled, and to speak to the physicians throughout the country and to the American people, concerning the American Medical Association, its aims and objectives.

### THE WORLD LOOKS TO AMERICA FOR LEADERSHIP

As history counts the years, the United States is a youthful country and American medicine also is young. Our country and the medical profession and the medical institutions which serve it have reached early maturity. Today, as never before, the world looks to us for guidance and leadership. We are the most favored among nations because the light of liberty burns brightly here. Individual freedom, opportunity and incentive are the cherished birthright of our people. Likewise, we of American medicine are most favored among doctors. We live and work in an atmosphere of individual liberty, and we have the priceless stimulus of academic and scientific freedom. We are strong because we possess the dignity of free men.

### ONLY FREE MEN CAN PRESERVE OUR MEDICAL ACHIEVEMENTS

Only if we perpetuate this heritage can we continue to provide the ever improving quality of medical care which is the right of the American people. During the past 2½ years we have been compelled to fight to maintain this essential freedom. The critical struggle to remain a free profession was not of our asking, but was forced upon us by those who have lost faith in traditional American concepts, and by those who hold the welfare of the American people to be less important than their own political advantage.

We undertook to acquaint the people with the facts. They have recognized the hazard to the quality of their medical care and the danger to their freedom inherent in socialized medicine. They have spoken out clearly and emphatically against it. We are grateful for the perception and the unequivocal expression of the American people.

### SERVICE TO HUMANITY IS MEDICINE'S PRIME OBJECTIVE

The "Principles of Ethics of the American Medical Association" opens with this statement: "The prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration."

To every doctor of medicine, let me say that this is a time for searching self-examination and earnest rededication to the high principles of our profession. We hold in trust the medical welfare of the nation, and to that trust we owe not only the conscientious application of our skills but tireless devotion.

To me, this hour marks the high point of my career. It is the beginning of a year of service to the health and medical welfare of our country and to my profession. It is a great honor to become President of the American Medical Association, but I assume that office without false pride. The responsibility not only to American medicine but to the American people is great. I accept it with humility—born of its importance—but face the coming year with confidence based on an intimate knowledge of my profession, and a steadfast belief in its ability and determination to render progressively greater service to our people.

### THE THREAT OF CATASTROPHE—ON TWO FRONTS

These are troubled times. The dark clouds of war hang menacingly over us. We must be prepared for catastrophe, should it come. If it does, the responsibilities of medicine will increase many fold. The Association has been working closely with the Department of Defense and other agencies of government in planning for such eventuality.

Simultaneously, we face the possible loss of freedom through the destruction of our constitutional guarantees of liberty and through avarice or moral disintegration in

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high places. As citizens, regardless of our occupations, we must recognize that the right of self-determination—the right to be master of one's own destiny—has disappeared in many countries. It is threatened in others, including our own. The independence of the individual, his freedom of speech and his right to follow the trade or profession of his choice are basic issues. Only those who now enjoy such advantages can preserve them.

### THE AMERICAN PEOPLE WILL RESPOND

I have a deep and abiding faith in the intelligence and integrity of the American people. They will respond as they did when their medical welfare and their medical freedom were threatened. We accepted the challenge of the would-be socializers not only because of the threat to our own professional freedom but on behalf of the welfare and freedom that is the right of all Americans. The members of the American Medical Association are more vigilantly alert than ever to their duties as citizens and will oppose socialistic schemes which would jeopardize the freedom of any segment of our society.

Primarily, we are physicians and our first obligation is to protect and preserve the health and medical welfare of the American people. A number of factors influence these important aspects of life, but medical care is one of the foremost. It is, therefore, appropriate at this time for American medicine to render a report of its stewardship.

### AMERICAN MEDICINE ASSUMES WORLD LEADERSHIP

American medicine has gone steadily forward. Some of the once great medical systems of the Old World have faltered and declined under stultifying government control while American medicine has forged into a position of world leadership.

The greatness of any nation can be measured, in part, by the health of its people. The United States *is* great and has developed the *foremost* medical care in the world. You are all beneficiaries, but you are contributors to this system as well.

American medicine could not have attained its present position without the assistance and cooperation of our educational institutions, our scientists, our colleagues in public health, our hospitals, nurses, dentists, labor and management, and all the American people, working with initiative and independence toward the same goal. Together we have made great progress in the fight against death and disease, until today we are the healthiest large nation in the world.

### TWENTY ADDED YEARS OF LIFE

Since the turn of the century, almost 20 years have been added to the life span of the American people. The general death rate during the same period has been cut almost in half. This represents the saving of more than one million American lives every year. Our population has doubled since 1900, but the population 65 years of age and older has quadrupled. This results from saving the lives of infants, children, and young adults.

An American mother now has better than 999 chances out of 1,000 to come through childbirth safely. This is the best record in our history and, on a comparable basis, the best in the world. In the 10 years between 1940 and 1950, infant mortality was cut 38%. At the present rate of progress the record of the United States should be shortly, if not already, the best in the world. A baby born today has more than 20% greater chance of reaching maturity and almost 45% greater chance of achieving the age of 50 than had a baby born in 1900. At the same time, he faces only about half the hazard of becoming an orphan before reaching maturity.

### THE CHOICE IS ACHIEVEMENT VERSUS SOCIALISTIC EXPERIMENT

I believe the mothers of America will consider that these achievements far outweigh the empty promises of those who urge a system of government-controlled medical care. We cannot afford to sacrifice this record upon the altar of socialistic experiment.

A recent survey conducted by the World Medical Association among the professions of 40 countries, disclosed that the United States was the country preferred for postgraduate study and specialty training. This country has the finest medical schools, the most modern and efficient hospitals, the best trained and most competent medical profession and by far the highest standard of medical care the world has ever known.

I should like to underscore the next statement. The American people are entitled to this assurance: *No health crisis or medical emergency exists in this country.* We are proud of the part the American Medical Association has played in this record of progress.

### A. M. A. GROWS AS A GREAT PUBLIC SERVICE ORGANIZATION

As our country has grown and changed from a rural to a mixed industrial and agricultural economy, the problems of medical care have multiplied. The American Medical Association has grown and developed correspondingly during the same period. Few Americans know of the extensive activities of the Association devoted to their welfare. Few realize the degree to which it is a great public service organization. The nine-story headquarters building in Chicago houses more than 800 employees, working full time on projects which are directly or indirectly in the public interest.

Early in the present century, medical education in this country was in a deplorable condition. "Diploma mills" and second and third rate schools flourished. The American Medical Association, in cooperation with others, established sound educational standards and began regular inspection of medical schools. Today, all the medical schools in this country are of high quality and are turning out splendid physicians. This is one of the main reasons why medical science has progressed so rapidly in the United States during the past 30 years.

### A MEDICAL F. B. I. PROTECTS THE PEOPLE

For the past 50 years, the Association has worked for high standards in the manufacture of drugs and appliances. The American Medical Association itself tests hundreds of drugs and appliances every year. Its seal of approval upon such products assures the profession and the laity, alike, of high quality.

The Association operates what might be described as a medical F. B. I., which investigates and exposes quack doctors and fake remedies. Every year many worthless medicines and treatments appear upon the scene. The American Medical Association cooperates with law-

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enforcing agencies throughout the country in securing withdrawal of such remedies and in exposing quack practitioners.

### A. M. A. FUNDS FOR MEDICAL RESEARCH AND EDUCATION

On the other hand, the Association consistently encourages and assists worth while research. Every year the Association spends several hundred thousand dollars to aid research. It was a pioneer in health education, and spends additional hundreds of thousands of dollars annually giving factual health information to the American people through newspapers, pamphlets, radio, television, and motion pictures.

The American Medical Association has promoted the development of sound voluntary health insurance to ease the financial burden of serious illness. As a result of this effort, in conjunction with hospital groups, insurance companies, labor, industry and others, there has been tremendous growth of this type of coverage. Today, more than 72 million people have some type of voluntary protection against the financial shock of illness. We shall continue our efforts to expand and improve prepaid medical care, and confidently look forward to the enrollment of the vast majority of our people in voluntary plans within the next few years.

### PRIVATE ENTERPRISE IS SOLVING THE ECONOMIC PROBLEM OF ILLNESS

I can make this flat declaration: *The problem of insurance against the economic hazards of illness is well on its way to orderly solution within the existing framework of private enterprise.*

One of the most important tasks of the Association is to keep its members informed of the latest developments in medical science. To this end, it holds two large meetings each year. The physicians learn by hearing papers presented by leaders of the profession, viewing films and television portrayals of surgical and diagnostic procedures and by wandering through miles of medical exhibits. One physician recently described such a meeting as "a complete postgraduate education under one roof."

To inform the physician who cannot attend these meetings and to eliminate delay in presenting new discoveries made between meetings, the Association regularly publishes ten scientific journals and several books. The weekly JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION is the most widely read and most highly esteemed of all medical periodicals.

What do these activities mean to you, the public? These services of the American Medical Association keep *your* doctor up to date through his years of practice so that he may render the best medical care to you and to your family.

### A. M. A. WORKS IN ALL FIELDS OF HEALTH

The Association is concerned with the health problems of *all* segments of society. It studies industrial hazards, cooperates with labor and management to eliminate them, and holds an annual conference on industrial health. It does similar work in the field of rural health, where it works with those organizations interested in rural problems. It has helped design plans for placing doctors in rural areas where they were needed.

The Association is currently studying means of improving services for those in the lower income brackets. It is one of the co-sponsors of the Commission on Chronic Illness, which studies diseases of long duration, particularly those of the aged. One council is devoted entirely to the problems of civil defense and the armed forces. Another bureau compiles and analyzes medical statistics. It recently completed the only national study of blood banks which has ever been made. The nation is now in a position to know the requirements for blood and the sources of supply.

### AVAILABILITY OF GOOD MEDICAL CARE CONSTANTLY INCREASING

In medical problems that are best solved at the local level, the Association serves in a coordinating and advisory capacity to state and county societies. It urges programs such as that to make medical care available at any hour by the establishment of night and emergency call systems in all communities.

Another project is the nationwide development of grievance committees, to hear and act upon complaints which patients may have concerning any aspect of medical service. Thirty-six states now have such committees.

There are many other public service projects of the American Medical Association, but this brief discussion perhaps will demonstrate the substantial contribution which organized medicine *has made* and *is making* to America's health. Problems still exist, and no one is more aware of them than the medical profession. Certain rural areas and some government services need more physicians, but there is no real shortage of physicians. The United States has more doctors than any country and except for Israel, where an abnormal situation exists, a higher ratio to the population than any nation.

### COOPERATION SOLVING PROBLEM OF DOCTOR DISTRIBUTION

Medical care is less available in certain areas than in others. However, the American Medical Association and the state and county societies are assisting such communities to obtain more doctors. They endeavor to bring together the doctors seeking places to practice and the localities in need of physicians.

The problem is one of distribution rather than shortage. Significant improvement has taken place and is continuing, as a result of the cooperation of the branches of medical organization with the local communities in need.

Looking toward the future, the American Medical Association favors training of more physicians. Our medical schools have expanded their enrollments. At this time, there are more students preparing for careers in medicine than at any time in our history, and by 1960 we will be producing at least 30% more physicians than we did in 1950. This tremendous growth will be accomplished without sacrifice in the quality of education. To fail to maintain our present high standards would be ruinous to the future of medical care.

### A. M. A. STIMULATES PRIVATE SUPPORT FOR MEDICAL SCHOOLS

Some of our medical schools, however, are in financial distress. This is a matter of deep concern to the American Medical Association. In appreciation of this situation,

the Association has donated a half million dollars in an effort to stimulate realistic private support for medical education. Other societies have contributed lesser amounts. On May 16 last, the Foundation created by the Association was merged with the National Fund for Medical Education headed by Mr. Herbert Hoover. I urge every physician to contribute promptly and generously.

In addition, we advocate one-time federal grants for necessary remodelling and construction. The Association believes that medical education can be financed adequately by these means and without danger of federal control. We recognize the great service to medical advancement rendered by our full-time basic science and clinical teachers, and seek to improve their opportunities.

### AMERICAN MEDICINE DEDICATED TO HIGH PURPOSES

In a changing world, nothing is static and new problems will arise. Physicians do not issue careless statements concerning the health of an individual or a nation. I make no irresponsible, utopian promises, but I assure you that we are attacking the problems confronting us with the same determination that has characterized our battle against disease.

I am proud to serve as President of the American Medical Association. It is a truly American institution, democratic in organization and dedicated to high purposes. It has one hundred forty odd thousand members —the vast majority of American physicians engaged in the care of the sick. The greatness of American medicine is inseparable from the over-all greatness of America. It has sprung from the same freedom which has made possible the attainment of high standards in all fields of endeavor.

### PHYSICIANS, AS CITIZENS, PLEDGE FIGHT FOR AMERICAN FREEDOMS

Democracy and democratic institutions are on trial. It is an historical fact that men must control themselves and their destinies or be controlled by others. The philosophy of statism is foreign to the American concept of life.

American medicine eagerly assumes its responsibility to provide medical care of ever higher standard for the American people and to bring that care progressively within easier reach of those who require it. At the same time, the physicians of this country pledge themselves to dynamic activity as citizens to preserve the freedom which is requisite to the fulfilment of their medical obligations to the American people.

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# TREATMENT OF RHUS DERMATITIS

*Colonel Robert J. Hoagland, Captain Paul W. Myers, United States Air Force,*
*and*
*Captain Henry C. Cosand, Medical Corps, United States Army*

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Numerous treatments for Rhus dermatitis are mentioned in textbooks of dermatology, and a writer on the subject is likely to be surprised by interest shown by the lay press and by many laymen volunteering cures involving various herbs or chemicals. The many remedies advocated by physicians and the laity testify both to unscientific thinking and to difficulties involved in controlled investigations.

Treatment of 70 patients with ivy dermatitis with tripelennamine (pyribenzamine®) hydrochloride cream and calamine lotion, in the summer of 1949, led to the conclusions that further trials with tripelennamine locally were desirable and that a local anesthetic such as dibucaine (nupercainal®) would be preferable to calamine lotion for comparison with agents believed to have curative effects.[1] In addition, investigation of other recommended remedies might result in finding a treatment that could be shown to accelerate recovery from Rhus dermatitis.

Investigation and evaluation of a proposed treatment for ivy dermatitis is made unusually difficult by individual variations in types of lesions resulting from exposure. For example, some patients have chiefly papular lesions; others have blebs, vesicles and oozing lesions; still others have a cellulitis type of reaction. A few patients complain of intolerable pruritus, but some have little or no itching. The final extent of involvement and ultimate severity of the disease cannot be estimated accurately when the patient is first seen, because new lesions often continue to appear for several days after exposure. Furthermore, trauma produced by scratching during sleep and secondary infections may unpredictably delay recovery. For these reasons, comparisons of different modes of treatment in different patients are either valueless or misleading. Comparisons of new treatments with treatments used on previous occasions by the same patient are invalid because the degree of dermatitis in previous attacks is not known to the investigator, the susceptibility of patients is variable, and patients' memories are unreliable. Successive use of different medications on the same lesion cannot lead to valid conclusions because the first medicament is usually applied while the disease is in ascendancy, whereas later treatments merely coincide with spontaneous recovery. Finally, unless patients are carefully observed, one cannot be certain whether the remedies prescribed are being properly used and, of greatest importance, whether subjective improvement is reflected in rapid healing.

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From the United States Army Hospital, United States Military Academy, West Point, N. Y.

The dibucaine ointment (nupercainal®) and tripelennamine (pyribenzamine) cream used were furnished by Ciba Pharmaceutical Products, Inc., Summit, N. Y. Tannic acid solution, 5 per cent, containing chlorothen, 2 per cent, and phenol, 0.4 per cent (rhulitol® containing chlorothen) was supplied by Lederle Laboratories Division, American Cyanamid Company, Pearl River, N. Y., and a compound of hydrogen peroxide, acetanilid not over 0.017 per cent, acetic acid, benzethonium chloride 0.75 per cent and propylparahydroxybenzoate 0.02 per cent (neoxyn®) was furnished by William H. Rorer, Inc., Philadelphia, Penn.

1. Hoagland, R., and Myers, P.: Treatment of Rhus Dermatitis, U. S. Armed Forces M. J. (May) 1950.

A review of the literature reveals inconsistent statements, unproved opinions, and uncritical conclusions regarding the prophylaxis, treatment and duration of Rhus dermatitis. For example, Alderson,[2] Bivings [3] and Caulfeild [4] recommended the use, orally and intramuscularly, of extracts of Rhus toxicodendron in treatment, but they used no control cases, whereas Howell,[5] using control patients, showed that there was no significant difference in the rate of healing between groups receiving and not receiving injections. He concluded that the fundamental basis for treatment with intramuscular injections of poison ivy extract was unsound and that this treatment was contraindicated. Sharlit and Newman [6] gave 74 patients injections of an extract of poison ivy and gave eight control subjects injections of absolute alcohol. They concluded that their extract was curative in cases of Rhus dermatitis, but their criterion of effective therapy was cessation of symptoms and of further spread of inflammatory reactions, not acceleration of recovery in comparison with that in controls.

Our observations, over five years, indicate that differences in statements regarding the usual duration of Rhus dermatitis are explained by differences in offending plants and in intensity and durations of exposure, individual differences in hypersensitivity and reaction and in the extent and locations of lesions. The importance of intensity and duration of exposure was dramatically demonstrated by Molitch and Poliakoff,[7] who stated that patients inoculated with poison ivy extract remained free of the disease despite playing in an environment containing poison ivy, but incurred severe dermatitis when they held plants for 30 seconds.

Witherspoon [8] advocated the use of a cream containing 1 per cent menthol or phenol and 10 per cent sodium perborate but used no controls. Of 70 patients, 90 per cent were clinically cured in five to seven days, but in none was the disease severe enough to warrant hospitalization. Results of treatment of hospitalized patients with severe involvement were not stated, although such patients received similar treatment. Blumenthal and Rosenberg [9] reported relief from pruritus in 12 of 14 patients given 50 mg. of diphenhydramine hydrochloride orally every four to six hours, but they did not describe the severity of the disease. Tweedall and O'Connor [10] gave 100 mg. of tripelennamine hydrochloride orally one hour before applying an extract of Rhus toxicodendron to five persons who had strongly positive patch tests for this substance, and 50 mg. at the time of application as well as every four hours for 24 hours. They observed only moderate relief from burning and itching and no prevention of dermatitis. Furthermore, in 1946 we used diphenhydramine orally for Rhus dermatitis, in doses identical to those used by Blumenthal and Rosenberg, without subjective or objective improvement. Philip [11] treated 11 patients having Rhus dermatitis with diphenhydramine cream and reported disappearance of weeping and itching within 36 hours in eight patients; however, three patients had symptoms for eight days. Only two controls were reported. Sulzberger, Baer and Levin [12] used tripelennamine ointment locally for various skin disorders, but not for Rhus dermatitis, and reported that it produced an eczematous allergic reaction in two of 90 patients. Strauss [13] confirmed this observation and showed that tripelennamine, not the vehicle for the drug, produced an acute, oozing, edematous dermatitis. Four of 70 patients studied by us in 1949 also experienced irritation from tripelennamine. Ethyl chloride spray was used on 101 patients by Robinson,[14] who reported good results but used no controls.

## TECHNIC OF STUDY

Whenever practicable, areas of Rhus dermatitis of about equal duration and intensity, on the same patient, were chosen for treatment with different medicaments and were examined daily. When areas of equal intensity could not be found, a patch of dermatitis was divided with an indelible line into equally involved areas. The halves of the area were treated differently. The following remedies were used: 2 per cent tripelennamine cream, dibucaine ointment and a 5 per cent tannic acid solution plus chlorobutanol 1 per cent, phenol 0.4 per cent, camphor ammonium alum and isopropyl alcohol 39.5 per cent (rhulitol®) with chlorothen citrate (tagathen®), a compound of acetic acid, hydrogen peroxide, benzethonium chloride 0.75 per cent, propylparahydroxybenzoate 0.02 per cent, water and aromatics (neoxyn®), 2 per cent zinc sulfate solution and ethyl chloride spray. A total of 92 patients, with 217 involved areas, were treated. The table gives the details of treatment.

*Details of Treatment of 217 Areas Affected by Rhus Dermatitis*

| Medications Used | Number of Areas Treated | Degree of Severity of Dermatitis | | |
|---|---|---|---|---|
| | | Mild | Medium | Severe |
| Tripelennamine cream | 47 | 24 | 13 | 10 |
| Dibucaine ointment | 37 | 21 | 14 | |
| Tannic acid with chlorothen | 52 | 21 | 22 | |
| Propylparahydroxybenzoate | 43 | 14 | 22 | 7 |
| Zinc sulfate solution | 32 | 15 | 11 | 6 |
| Ethyl chloride spray | 6 | 5 | 1 | 0 |

## RESULTS

Twenty-seven patients with paired lesions of about equal severity were treated with tripelennamine cream and dibucaine ointment. In 15 instances the results were about the same. In 10 instances tripelennamine cream, and in two instances dibucaine ointment, appeared to accelerate healing slightly. In this group, as well as in all of the cases outlined below, the use of no medication was followed by dramatically swift recovery.

2. Alderson, H. E.: Treatment of Poison Oak Dermatitis, California & West. Med. **23**: 982-985 (Aug.) 1925.
3. Bivings, F. L.: Successful Desensitization and Treatment of Poison Ivy and Poison Oak, Arch. Dermat. & Syph. **9**: 602-606 (May) 1924.
4. Caulfeild, A. H. W.: Specific Diagnosis and Treatment of Poison Ivy (Rhus toxicodendron) Dermatitis, J. Allergy **9**: 535-544 (Sept.) 1938.
5. Howell, J. B.: Evaluation of Intramuscular Injections of Specific Extracts in Treatment of Acute Poison Ivy Dermatitis, Ann. Allergy **5**: 219-223 (May-June) 1947.
6. Sharlit, H., and Newman, B. A.: Specific Therapy in Rhus Dermatitis, New York J. Med. **37**: 61-63 (Jan. 1) 1937.
7. Molitch, M., and Poliakoff, S.: Prevention of Dermatitis Venenata Due to Poison Ivy in Children, Arch. Dermat. & Syph. **33**: 725-728 (April) 1936.
8. Witherspoon, F. G.: New Method for Ambulatory Treatment of Poison Ivy Dermatitis, J. Tennessee M. A. **40**: 1-2 (Jan.) 1947.
9. Blumenthal, L. S., and Rosenberg, M. H.: Benadryl for Ivy Poisoning, M. Ann. District of Columbia **16**: 86-87 (Feb.) 1947.
10. Tweedall, D. C., and O'Connor, W. B.: Pyribenzamine in Therapy and Prophylaxis of Rhus Dermatitis, J. Invest. Dermat. **10**: 301-302 (May) 1948.
11. Philip, A. J.: Treatment of Itching Dermatoses with an Ointment Containing Diphenhydramine (Benadryl), New York J. Med. **49**: 1179-1181 (May 15) 1949.
12. Sulzberger, M. B.; Baer, R. L., and Levin, H. G.: Local Therapy with Pyribenzamine Hydrochloride, J. Invest. Dermat. **10**: 41-42 (Feb.) 1948.
13. Strauss, M. J.: Eczematous Contact-Type Allergy to Pyribenzamine, J. Invest. Dermat. **11**: 155 (Sept.) 1948.
14. Robinson, M. M.: Treatment of Dermatitis Venenata (Rhus) by Cyrotherapy, J. Invest. Dermat. **8**: 239-243 (May) 1947.

Twenty-five patients received tripelennamine cream and tannic acid, 5 per cent, with chlorothen, on paired lesions. In 21 instances the results were about the same, and of the remaining four two appeared to respond better to tripelennamine, whereas the other two appeared to respond better to tannic acid.

Twelve patients received tannic acid with chlorothen and a 2 per cent zinc sulfate solution on paired lesions. Half of these had approximately equal effects from each; tannic acid appeared to be superior to zinc sulfate in four instances, and the opposite result was obtained in 2 instances.

Propylparahydroxybenzoate and 2 per cent zinc sulfate solution were used on eight patients with equally involved areas; there was no discernible difference in results.

Tripelennamine cream and propylparahydroxybenzoate were used in 2 paired cases with no apparent difference in results.

Tannic acid with chlorothen appeared to be slightly superior to propylparahydroxybenzoate in all of five patients who received these medicaments on paired lesions.

Five patients receiving tannic acid with chlorothen and dibucaine ointment appeared to derive about equal benefit from both treatments.

Only two patients received propylparahydroxybenzoate and dibucaine ointment on equally involved areas; one appeared to benefit more from the former and one from the latter treatment.

Six patients had lesions treated with ethyl chloride spray, while similarly involved areas were treated with dibucaine ointment. No patients derived benefit from the spray, and three spray-treated areas were irritated and healed slowly.

Evaluation of the effect of these medicines on itching was difficult. In general, it could be said that all were antipruritic and that propylparahydroxybenzoate, ethyl chloride, and zinc sulfate were the least effectual. Tripelennamine cream, dibucaine ointment and tannic acid compound with chlorothen were approximately equally effective as antipruritics.

## COMMENT

Rhus toxicodendron dermatitis resembles a burn in that the skin is exposed to a noxious agent, and, as a result, a relatively unalterable sequence of changes manifesting reaction and repair is set in motion. No locally applied medications used by us—including tripelennamine cream, anesthetic creams, zinc sulfate solution, tannic acid solution with chlorothen, propylparahydroxybenzoate and ethyl chloride spray—dramatically accelerated healing. Patients often speak of remedies acting promptly to effect recovery, "drying up the rash almost overnight." We could not demonstrate such effects. The antihistamine medications appeared to speed healing slightly in some instances, but in over half of the cases their effect was no better than that of agents that had no antihistamine action.

Itching and burning pain are the two chief subjective complaints. They are, however, not uniformly present. When these symptoms occurred, they were usually alleviated, at least partially, by any one of the medications used, except ethyl chloride spray, which was practically worthless; a 2 per cent zinc sulfate solution was of little value. A 5 per cent tannic acid compound with an antihistamine (rhulitol* with tagathen*), 2 per cent tripelennamine cream, dibucaine ointment, and the hydrogen peroxide, benzethonium, acetic acid compound, propylparahydroxybenzoate, were most effectual in lessening symptoms.

Application of moist warm compresses accelerated recovery when used on cellulitis-like lesions characterized by swelling, local heat and redness. Patients with severe dermatitis may have such inflammatory lesions without secondary infection. The latter are effectively treated with systemic use of penicillin or aureomycin, and aureomycin ointment applied locally, not available at the time of this investigation, merits trial.

## SUMMARY AND CONCLUSIONS

1. Ninety-two patients with 217 areas of Rhus dermatitis were treated with: 2 per cent tripelennamine pyribenzamine hydrochloride cream, dibucaine ointment, a 5 per cent tannic acid solution (Rhulitol*) with chlorothen (tagathen*), a compound of acetic acid, hydrogen peroxide, benzethonium chloride and propylparahydroxybenzoate, 2 per cent zinc sulfate solution and ethyl chloride spray.

2. Accurate evaluation of proposed treatments for Rhus dermatitis is difficult, because many variables are involved—for example, individual susceptibility and reaction; extent and duration of exposure to plants; secondary trauma, and duration of dermatitis before treatment.

3. Comparisons between different medications or different individuals are invalid. Only if approximately equally affected and equally old areas of dermatitis on the same patient are treated differently and simultaneously can reliable comparisons and conclusions be made. Ninety-two patients had paired areas of dermatitis, equivalent in duration and intensity of dermatitis, treated concurrently with two medications.

4. The speed of recovery from Rhus dermatitis is not dramatically influenced by any agent applied to the skin's surface, but it may be accelerated (at least in cellulitis-like lesions) by application of warm moist compresses, and, in some patients, to a slight degree by locally applied antihistamines.

5. Treatments recommended in Rhus dermatitis are creams or solutions containing local anesthetics, perhaps wtih antihistamines, and warm, moist compresses for cellulitis-like or oozing lesions.

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**The Physician's Features.**—No matter how hard he [the patient] stares at your countenance, he should never be able to read his fate in it. It should be cheerful as long as there is hope, and serene in its gravity when nothing is left but resignation. The face of a physician, like that of a diplomatist, should be impenetrable. Nature is a benevolent old hypocrite; she cheats the sick and the dying with illusions better than any anodynes. If there are cogent reasons why a patient should be undeceived, do it deliberately and advisedly, but do not betray your apprehensions through your tell-tale features.—Oliver Wendell Holmes, Medical Essays, Boston, Houghton, Mifflin & Company 1883, p. 387.

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# DRAMATIC RESPIRATORY SYMPTOMS INDUCED BY SUDDEN WITHDRAWAL OF ACTH

*Robert W. Keeton, M.D., William R. Best, M.D., Ford K. Hick, M.D., M. M. Montgomery, M.D.*
*and*
*Max Samter, M.D., Chicago*

Untoward side effects are major obstacles to the prolonged administration of pituitary adrenocorticotropic hormone (ACTH). Although most of these effects are due to excessive release of corticoids, there is increasing evidence that prolonged administration of the hormone has a profound effect on both the anterior pituitary and the adrenal cortex. In most instances, functional deficiency of the glands remains on a subclinical level. It seems, therefore, justifiable to report two cases, both of respiratory impairment, in which withdrawal of the drug caused severe clinical manifestations.

## REPORT OF CASES

CASE 1.—The first patient, E. F., a 48 year old white male, has had a progressive, severe pulmonary fibrosis of unknown etiology for four years. In 1949, six months prior to administration of the hormone, he developed cor pulmonale with mild cardiac decompensation. Prior to administration of the drug he was dyspneic, had frequent coughing spells, complained of marked nasal congestion and was unable to engage in minimal activities. Twenty mg. of pituitary adrenocorticotropic hormone administered three times daily, resulted in objective improvement within 48 hours—his nasal passages cleared; his breathing improved noticeably; his cough stopped; he experienced a pronounced feeling of well-being and was soon able to resume moderate activities.

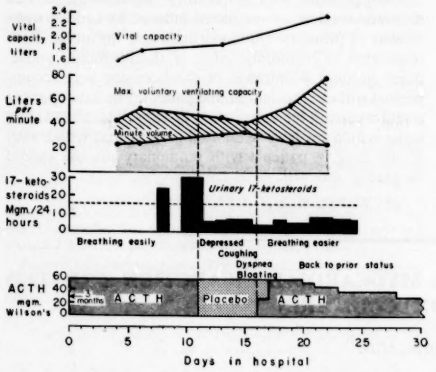


Fig. 1.—Hospital course of patient E. F., who has pulmonary fibrosis.

The hormone was discontinued after two months of therapy, and within 36 hours dyspnea and episodes of coughing returned. The patient became depressed, and then hysterical. His condition deteriorated so rapidly that hormone therapy was resumed, with rapid improvement in his physical and mental status.

In order to study the mechanism of this reaction, he was hospitalized one month later at the Research and Educational Hospitals. He was continued on 20 mg. of the drug, three times daily, for 11 days. The urinary excretion of 17-ketosteroids suggested an adequate adrenocortical response (fig. 1). On the twelfth day, placebo injections were substituted for the hormone without the patient's knowledge. Forty-eight hours later a marked mental depression became evident, a slight cough was present and breathing became more difficult. Dyspnea and coughing increased during the next two days. He was not cyanotic. His pulse rate was 124, his respirations were 36 per minute and his temperature was 100.2 F. Treatment with the drug was resumed, and again he recovered within 48 hours. After recovery there was a gradual decrease in minute volume, accompanied by an increase in vital capacity and maximum voluntary ventilating capacity beyond the level established prior to the administration of the placebo. Since then the dosage of the drug has been gradually reduced, and he is at present receiving 30 mg. in divided doses.

CASE 2.—The second patient, E. U., a 58 year old man, has had chronic bronchitis with secondary emphysema for 10 years. Dyspnea has become progressively more severe during the past eight years. Prior to the administration of pituitary adrenocorticotropic hormone, minimal efforts, such as shaving or walking a few yards, produced marked shortness of breath. He was admitted to the Research and Educational Hospitals, and, after a suitable control period, was given 40 to 60 mg. of the drug, first in the hospital, then at home, over a 45 day period. Improvement was slight, in spite of the increased excretion of 17-ketosteroids in the urine (fig. 2). Improvement did not seem to warrant further administration of the hormone. Seventy-two hours after sudden and complete withdrawal of the drug, he became weaker and very dyspneic. His condition became rapidly worse and from the fourth to the eighth day he required continuous oxygen. At this time he was readmitted to the hospital in a critical condition. He was very weak, severely dyspneic, coughed frequently and his face had an ashen color. His temperature was 101.4 F., his pulse rate was 126 per minute and his respirations were 36 per minute. His blood pressure was 152/110. A chest roentgenogram showed no change. Electrolyte studies on admission were normal. Streptomycin and aureomycin were started immediately, without apparent effect. Twenty-four hours after the patient's admission to the hospital, the drug was resumed without his knowledge, and within another 24 hours his clinical condition improved noticeably. Three days later he felt about the same as he had prior to withdrawal of the hormone. 17-Ketosteroids determinations, though not obtained during the drug-free interval, did not rise

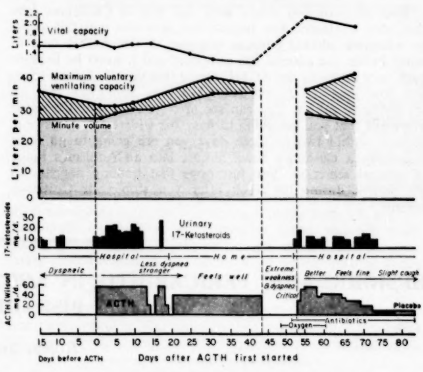


Fig. 2.—Hospital course of patient E. U., who has emphysema.

From the Department of Medicine, University of Illinois College of Medicine.

Read before the twenty-third Annual Meeting of the Central Society for Clinical Research, Chicago, November 3, 1950.

in proportion to clinical improvement during the second course of therapy. The drug was very gradually withdrawn over an 18 day period without incident.

### COMMENTS

The histories of these two patients raise two major questions: First, what is the mechanism responsible for the dramatic collapse of the patient on withdrawal of pituitary adrenocorticotropic hormone? Second, what factors are responsible for the almost immediate and rapid improvement after resumption of therapy?

Treatment with corticotropin produces a hypofunction of the pituitary gland with decreased secretion of endogenous pituitary adrenocorticotropic hormone. When corticotropin is suddenly withdrawn, this deficiency of the endogenous hormone results in a secondary hypoadrenalism. On the other hand, if pituitary adrenocorticotropic hormone is gradually withdrawn, the glands adapt themselves to their pretreatment capacity. Thorn has called attention to the so-called adrenal atrophy during and following cortisone therapy. His statement—presented during an informal discussion at the First Conference on the Adrenal Cortex, of the Josiah Macy, Jr., Foundation—reads:

> You treat for two weeks with 100 mg. of Cortisone. You then stop treatment. For two to five days you will fail to get an adequate adrenal cortical response to the ACTH test. In other words, the adrenal has atrophied and it won't be brought back very easily by the ACTH during that period. I don't know just how long the period lasts. We have had cases that we are trying to follow. You can see after you stop the Cortisone treatment that you are going to have the widest possible swing, because within two or three days you are going to go from essentially a Cushing's down almost into an Addison's range of adrenal secretion. You just hope that nothing happens to the patient during the week after you stop your Cortisone therapy.

One must realize, however, that Thorn's statement is based essentially on treatment with cortisone, not with pituitary adrenocorticotropic hormone.

In our patients, the rapid recovery after resumption of pituitary adrenocorticotropic hormone therapy leads us to believe that we are dealing with a pituitary rather than an adrenal cortex deficiency. Patients with bronchial asthma respond spectacularly to the hormone but frequently relapse on its withdrawal. One might reason that the pulmonary tissue is particularly vulnerable to sudden deficiencies of glucocorticoids; on the other hand, defenses against infections are profoundly modified during and after the administration of pituitary adrenocorticotropic hormone. It seems that interference with these defenses might be responsible for some of the features in the serious reactions which we have observed. This problem needs further investigation. We are presenting this clinical report because we feel that the possibility of producing serious clinical withdrawal symptoms after prolonged treatment with the hormone should be brought to the attention of clinicians using it.

### SUMMARY

Two patients with respiratory impairment showed dramatic respiratory symptoms induced by sudden withdrawal of pituitary adrenocorticotropic hormone. Both responded to readministration of the hormone. Subsequent gradual withdrawal of the hormone was accomplished without incident in one patient. The other patient is still receiving the hormone in therapy. The clinical histories which we have presented suggest that withdrawal of the drug in patients with pulmonary disease should be carried out with great caution.

1853 W. Polk Street.

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## HEMORRHAGIC PERICARDITIS IN ACUTE MYOCARDIAL INFARCTION TREATED WITH BISHYDROXYCOUMARIN

*Robert Goldstein, M.D.*
*and*
*Louis Wolff, M.D., Boston*

The reports of the Committee for the Evaluation of Anticoagulants in the Treatment of Coronary Thrombosis with Myocardial Infarction, American Heart Association, and several other reports [1] have indicated the efficacy of anticoagulant therapy in acute myocardial infarction. The drug of choice at the present time is bishydroxycoumarin (dicumarol®). Its toxicity has been studied in animals,[2] and the hemorrhagic complications that occur clinically have been reported. It is the purpose of this communication to call attention to an unusual and serious hemorrhagic complication heretofore unreported and to emphasize the clinical signs that make possible early recognition of this complication.

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From the Medical Research Department, Yamins Research Laboratory, Beth Israel Hospital and the Department of Medicine, Harvard Medical School.

### REPORT OF CASES

Case 1.—This was the first admission to the hospital of a 42 year old white man, who entered with severe substernal pain of one hour's duration. He had had no previous history of exertional dyspnea, chest pain, peripheral edema, diabetes or hypertension. On the morning of admission, while driving his car, he suddenly experienced severe squeezing pain over the precordium and sternum, which radiated into the left shoulder and down the left arm. This was accompanied with profuse sweating, weakness and nausea. The pain persisted until the time of admission.

Examination revealed an apprehensive man complaining of severe pain in the chest. There was no engorgement of the neck veins; slight cyanosis was evident. The heart was not enlarged, the rhythm was regular, the heart sounds were distant and the first apical sound was split. There were no murmurs, thrills or friction rub. The blood pressure was 95/65 in both arms. There were fine moist rales at base of each lung. The liver and spleen were not palpable, and there was no peripheral edema. The white blood cell count was 11,000 per cubic millimeter. The corrected sedimentation rate was 0.9 mm. per minute (Rourke-Ernstene

method,[3] normal 0.08 to 0.35 mm. per minute). The urine was normal. The electrocardiogram showed changes characteristic of an acute posterior myocardial infarct.

The initial treatment consisted of bed rest and use of oxygen and morphine. Bishydroxycoumarin, 300 mg., was administered on the first day immediately after the determination of the prothrombin time. The drug was administered daily thereafter in doses calculated to maintain the prothrombin time between 30 and 35 seconds (5 to 10 per cent prothrombic activity according to the Rosenfield and Tuft method) [4] (table1).

During the first six hospital days the temperature ranged between 101 and 102 F. and then gradually fell, reaching normal on the eleventh day (fig. 1). Basal rales and slight cyanosis persisted despite continuous administration of oxygen. On the third hospital day a pericardial friction rub was first noted. The rub was heard at all examinations over the entire precordial area, from the third to the twelfth hospital day; after this period it was no longer audible. On the fourth hospital day moderate icterus was noted and the liver was palpated 2 fingerbreadths below the right costal margin. The urine gave a positive test for bile.

At the end of the first week, the patient was free of pain; the lungs were clear and cyanosis was absent. By the ninth hospital day jaundice was no longer detectable and the urine was free of bile. The blood pressure during this period was 100-110/60-70.

The temperature rose to 101 F. on the thirteenth hospital day. The following day, the prothrombin time was 45 seconds, and bishydroxycoumarin was not given. On the morning of the fifteenth day, rales at base of each lung and slight cyanosis were again noted and the prothrombin time was 40 seconds. A few hours later, anterior chest pain recurred and lasted approximately one-half hour; relief was then obtained with meperidine hydrochloride. Shortly after the onset of pain, there was a fall in the blood pressure to 90/80. This level was maintained until early morning of the sixteenth hospital day, when there was more profound vascular collapse. It was noted that all superficial veins were distended. The prothrombin time was 67 seconds, although bishydroxycoumarin had not been given the previous two days. There were no overt hemorrhagic manifestations. The patient was given 100 mg. of menadione sodium bisulfite and 200 cc. of stored plasma intravenously during the course of the next few hours, after which the prothrombin time was 31 seconds. The patient failed to respond to therapy and died at 7 p. m. on the sixteenth hospital day.

*Postmortem Examination.*—The pericardium was found to be firmly adherent over the greater part of the left ventricle, except toward the base and over the septum anteriorly. It was also adherent over the posterior surface of the right ventricle, extending to the apex, over the auricles and to its reflexion at the great vessels. Six hundred cubic centimeters of bloody fluid were present in the free pericardial space. The hematocrit value of this fluid was 45 per cent. The addition of either 1 or 10 units of thrombin to 1 milliliter of the pericardial fluid caused no clot formation, thus indicating the absence of fibrinogen. No prothrombic activity could be demonstrated in the pericardial fluid by the Rosenfield and Tuft modification of Quick's one stage method.[4] After the bloody fluid was removed, there remained a thick, heavy, fibrinous, partially organized exudate. In the adherent areas, the pericardium stripped with difficulty, leaving a partially organized blood clot on the epicardium.

The left ventricular myocardium, except for the anterior portion toward the base, appeared to be involved in a recent infarction characterized by blue-black discoloration and thinning of the myocardium. The cut surfaces revealed necrosis and gelatinous degeneration. Both papillary muscles were involved. The posterior portion of the right ventricle, the apex and the entire length of the septum posteriorly were also involved in this process. The papillary muscles in the right ventricle appeared normal. No perforations, tears or ruptures of the myocardium or coronary vessels were found after careful examination, and leakage of the injection mass into the myocardium was not observed.

TABLE 1.—*Maintenance of Prothrombin Time Between 30 and 35 Seconds*

| Hospital Day | Prothrombin Time, Seconds | Prothrombic Activity, Per Cent | Bishydroxycoumarin Dose, Mg. |
|---|---|---|---|
| 1 | 13.7 | 96 | 300 |
| 2 | 17.4 | 49 | 200 |
| 3 | 33.7 | 5.0 | 50 |
| 4 | 36.9 | 4.4 | 0 |
| 5 | 42.0 | 3.8 | 0 |
| 6 | 31.1 | 5.9 | 50 |
| 7 | 36.4 | 4.6 | 0 |
| 8 | 31.4 | 5.8 | 50 |
| 9 | 25.9 | 8.6 | 100 |
| 10 | 30.9 | 6.0 | 50 |
| 11 | 28.9 | 7.0 | 100 |
| 12 | 25.6 | 8.7 | 150 |
| 13 | 30.3 | 6.2 | 100 |
| 14 | 44.8 | 3.3 | 0 |
| 15 | 39.5 | 4.0 | 0 |
| 16 | 67 | 2.3 | 0 |
| | 30.7 | 6.1 | ... |

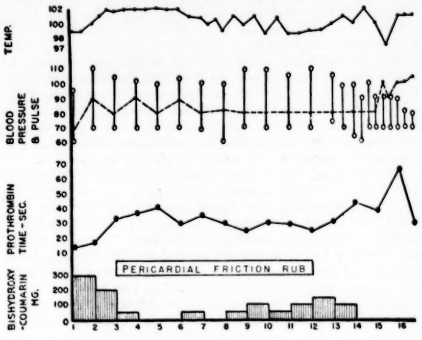


Fig. 1.—Clinical course in case 1.

Injection and dissection of the coronary arteries according to the Schlesinger technique [5] revealed atheromatous plaques and slight narrowing along the entire length of the main left anterior descending artery. The left circumflex artery was essentially normal. Atheromatous plaques in the main right coronary artery caused moderate narrowing of the vessel up to an occlusion 5 cm. from the mouth of the vessel. The occlusion was caused by an organized adherent thrombus 0.9 cm. in length, surrounded by an atheromatous abscess. Just distal to the occlusion there was a tail-like, nonadherent, nonoccluding thrombus, the base of which was partially organized and attached to the

1. (*a*) Wright, I. S.; Marple, C. D., and Beck, D. F.: Anticoagulant Therapy of Coronary Thrombosis with Myocardial Infarction, J. A. M. A. **138**: 1074 (Dec. 11) 1948. (*b*) Wright, I. S.: Experiences with Dicumarol (3,3'-Methylenebis [4-Hydroxycoumarin]) in the Treatment of Coronary and Myocardial Infarction, Am. Heart. J. **32**: 20 (July) 1946. (*c*) Glueck, H. I.; Strauss, V.; Pearson, J. S., and McGuire, J.: Combined Heparin-Dicumarol Therapy of Myocardial Infarction: Clinical and Pathologic Study, Am. Heart J. **35**: 269 (Feb.) 1948. (*d*) Parker, R. L., and Barker, N. L.: The Effect of Anticoagulants on the Incidence of Thrombo-Embolic Complications in Acute Myocardial Infarction, Proc. Staff Meet., Mayo Clin. **23**: 367 (Aug. 4) 1948. (*e*) McCall, M.: Dicumarol Therapy in Acute Coronary Occlusion with Myocardial Infarction, Am. J. M. Sc. **215**: 612 (June) 1948. (*f*) Reich, C., and Eisenmenger, W.: Further Studies on the Anticoagulants, Am. J. M. Sc. **215**: 617 (June) 1948.

2. (*a*) Rose, C. L.; Harris, P. N., and Chen, K. K.: Toxicity of 3,3'-Methylenebis (4-Hydroxycoumarin), Proc. Soc. Exper. Biol. & Med. **50**: 228 (June) 1942. (*b*) Bollman, J. L., and Preston, F. W.: The Effect of Experimental Administration of Dicumarin, J. A. M. A. **120**: 1021 (Nov. 28) 1942. (*c*) Richards, R. K., and Cortell, R.: Studies on Anticoagulant (Dicumarol), Proc. Soc. Exper. Biol. & Med. **50**: 237 (June) 1942. (*d*) Bingham, J. B.; Meyer, O. O., and Pohle, F. J.: Studies on the Hemorrhagic Agent 3,3'-Methylenebis (4-Hydroxycoumarin): I. Its Effect on the Prothrombin and Coagulation Time of Dogs and Humans, Am. J. M. Sc. **202**: 563 (Oct.) 1941. (*e*) Blumgart, H. L.; Freedberg, A. S.; Zoll, P. M.; Lewis, H. D., and Wessler, S.: The Effect of Dicumarol on the Heart in Experimental Acute Coronary Occlusion, Am. Heart J. **36**: 13 (July) 1948.

3. Rourke, M. D., and Ernstene, A. C.: A Method for Correcting the Erythrocyte Sedimentation Rate for Variations in the Cell Volume Percentage of Blood, J. Clin. Invest. **8**: 545 (June) 1930.

4. Rosenfield, R. E., and Tuft, H. S.: Estimation of Prothrombin Level from Prothrombin Time, Am. J. Clin. Path. **17**: 405 (May) 1947.

5. Schlesinger, M. J.: An Injection Plus Dissection Study of Coronary Artery Occlusions and Anastomoses, Am. Heart J. **15**: 528 (May) 1938.

previously described thrombus. All vessels distal to this point were injected by the mass from the left coronary artery. Microscopic sections revealed both a healing and a fresh infarct in the areas of gross change noted above; the latter appeared to be of about 24 hours' duration.

On gross examination, the liver appeared slightly firmer than normal and there was congestion of the central veins. Microscopic examination revealed early acute central necrosis. Gross and microscopic examination of the kidneys and other organs revealed no abnormalities.

CASE 2.—A 66 year old white woman was admitted to the hospital after an episode of chest pain. There was a 25 year history of moderately severe bronchial asthma and at least a 10 year history of hypertension; she had had albuminuria six years prior to the attack. Forty-eight hours before admission, substernal and left chest pain occurred suddenly. The pain was cutting in character and nonradiating. It lasted approximately two hours and was associated with sweating and vomiting. It was relieved by morphine and thereafter did not recur.

On admission, examination revealed an obese white woman who was moderately dyspneic and slightly cyanotic. Respirations were wheezing. The blood pressure was 180/100. The heart was moderately enlarged to the left. The rhythm was regular, with an occasional premature beat. The heart sounds were masked by the wheezing respiration. The anteroposterior diameter of the thorax was increased. There were loud ronchi and wheezes throughout both lung fields. The liver was felt 2 fingerbreadths below the right costal margin but was not tender. There was no icterus or edema. The white blood cell count was

TABLE 2.—*Prothrombic Response to Therapy*

| Hospital Day | Prothrombin Time, Seconds | Prothrombic Activity, Per Cent | Bishydroxycoumarin Dose, Mg. | Menadione Sodium Bisulfite Dose, Mg. |
|---|---|---|---|---|
| 1 | .. | .... | 300 | .. |
| 2 | 20 | 55.0 | 0 | .. |
| 3 | 43 | 4.4 | 0 | .. |
| 4 | 134 | 2.0 | 0 | 4.8 |
| 5 | 21 | 40.0 | 50 | .. |
| 6 | 70 | 3.2 | 0 | 4.8 |
| 7 | 62 | 3.7 | 0 | .. |
| 8 | 50 | 4.0 | 0 | .. |
| 9 | 62 | 3.3 | 0 | .. |

43,400 (polymorphonuclear cells 79 per cent, band forms 6 per cent, lymphocytes 6 per cent and monocytes 8 per cent) and remained elevated during the entire period of hospitalization. There were no abnormal cells in the peripheral blood smear. The urine contained albumin (4 +) and 8 to 10 white blood cells per high power field in an uncatheterized specimen. The specific gravity ranged from 1.010 to 1.020. The electrocardiogram was characteristic of posterior myocardial infarction and complete auriculoventricular block.

Therapy consisted of bed rest and administration of oxygen, codeine, penicillin, potassium iodide and small doses of epinephrine (adrenalin*) in oil. Bishydroxycoumarin, 300 mg., was administered on the evening of admission. Within 36 hours of this single dose, the plasma prothrombic activity had fallen to 4 per cent as determined by the Rosenfield and Tuft technique [4] and, except for a single determination of 40 per cent on the fifth hospital day, remained below 5 per cent for the duration of hospitalization, despite the administration of only one additional dose of 50 mg. of bishydroxycoumarin on the fifth hospital day (table 2). Whether the finding of 40 per cent prothrombic activity on the fifth hospital day was a laboratory error, a response to the small dose of menadione sodium bisulfite (4.8 mg.) given on the previous day, or a representation of the wide fluctuations in prothrombic activity not infrequently observed, cannot be stated.

The temperature fell from a level of 101 F. to normal within 24 hours and remained there. The pulse rate ranged between 45 and 60, as the complete auriculoventricular block persisted. There was evidence of moderate renal insufficiency, with nonprotein nitrogen values ranging from 50 to 60 mg. per 100 cc., and was 54 mg. seven hours before the patient's death.

The asthma was easily controlled, and only small doses of epinephrine in oil were necessary (0.3 cc. of a 1: 500 suspension) on the first, second and fifth hospital days. The heart sounds, which on the first day were obscured by the respiratory wheezes, were of poor quality. At no time was a pericardial friction rub heard. On the eighth hospital day the patient became lethargic and there was a marked decrease in urinary output. These symptoms persisted despite intravenous administration of fluids. On the eleventh hospital day the patient complained of severe periumbilical pain, but there were no abnormal abdominal signs. The white blood cell count, which had gradually fallen from a level of 43,400 on admission to 13,000 on the tenth hospital day, rose to 33,800. Peripheral vascular collapse occurred shortly after the onset of pain. Within a few hours the blood pressure, previously maintained at a level of 130/80, was unobtainable. The patient failed to respond to therapy and died on the eleventh hospital day.

*Postmortem Examination.*—The pericardial cavity was almost completely obliterated by numerous dense fibrous adhesions. The pericardium was separated with great difficulty, and in several areas over the anterior surface the epicardial and parietal layers were so densely adherent that they were removed together from the myocardium. In a few areas posteriorly, where free pericardial space still persisted, there was an accumulation of 50 to 75 cc. of bloody fluid, and when this was removed a partially organized blood clot on the epicardium was noted. Careful examination revealed no evidence of rupture, tear or perforation of the myocardium or coronary vessels.

The heart weighed 470 Gm. On gross examination there was evidence of an extensive myocardial infarct involving the posterior wall of the left ventricle, the posterior portion of the interventricular septum and the posterior papillary muscle. Microscopic examination revealed massive infarction involving the posterior wall of the left and right ventricles, the interventricular septum, the posterior papillary muscle and the left atrium. The right ventricular extension of the infarct was recent and appeared to be less than 24 hours old. In this area of recent infarction several small veins contained fibrin thrombi. The epicardium was covered by a heavy layer of fibrin, which in some areas was overlaid with masses of red blood cells. The inner portion of the epicardium showed organization of the fibrinous exudate. With the exception of the uterus, no other area of hemorrhage was observed. The uterine cavity contained 2 to 3 cc. of bloody fluid. The endometrium was hemorrhagic. The serosal surface of the uterus was normal.

The pancreas appeared normal on gross examination, but the microscopic sections revealed evidence of acute and chronic pancreatitis and acute focal necrosis.

The kidneys were somewhat smaller than average. The right kidney weighed 110 Gm. and the left 130 Gm. There was some thinning of the cortex. Microscopic examination revealed that the renal substance was essentially preserved. There were moderate sclerosis of the interlobular vessel and some focal areas of scarring and tubular atrophy.

The remainder of the examination revealed no significant abnormalities.

The third patient with myocardial infarction and complicating pericarditis herein reported was admitted to the Beth Israel Hospital for the first time shortly after the first patient died. Bishydroxycoumarin therapy was instituted upon admission. The clinical features so closely resembled those of the first case that the diagnosis of hemorrhagic pericarditis appeared likely, although final proof is lacking, since the patient recovered and a pericardial tap was not done.

CASE 3.—A 48 year old white man was hospitalized for recurrent chest pain of four days' duration. There was no history of rheumatic fever, hypertension or diabetes. For four years prior to admission he had noted mild anterior chest pain on moderate exertion. Four days prior to admission he experienced pain between the shoulder blades; it had come on suddenly and was aggravated by deep inspiration. Later that day, severe epigastric and anterior chest pain developed and was associated with a feeling of weakness in both arms and legs. Three days prior to admission, the temperature was 103 F. The heart sounds were poor, the patient was cyanotic, and signs consistent with

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consolidation at the base of the left lung were noted. An electrocardiogram showed changes characteristic of an extensive anterior myocardial infarct (fig. 2).

Examination on his admission to the hospital two days later revealed an acutely ill man with slight cyanosis; the respiratory rate was 25, temperature 103 F., pulse rate 100, and regular, and blood pressure 100/80. There was no engorgement of the neck veins. The heart was enlarged to the anterior axillary line, and a loud to and fro friction rub masked the heart sounds. There was bronchial breathing at the base of the left lung and diminished breath sounds and moist rales at the base of the right lung. The abdominal examination was noncontributory, and there was no peripheral edema. The white blood cell count was 16,000 per cubic millimeter. The sedimentation rate was 2.2 mm. per minute (Rourke-Ernstene method [3]). The urine was normal. The nonprotein nitrogen was 40 mg. per 100 cc. Therapy consisted of bed rest, liquid diet, fluids up to 2,500 cc., meperidine hydrochloride, as necessary, for pain, oxygen and bishydroxycoumarin. The prothrombic activity was maintained generally between 10 to 20 per cent of normal as estimated by the Rosenfield and Tuft technique [4] (prothrombin time between 20 and 30 seconds) (table 3).

During the first 12 hospital days, the patient showed clinical improvement. The temperature fell slowly, reaching normal by the seventh day, and the pulse rate during this period fell from 100 to 70. The chest pain necessitated frequent medication at first but was not troublesome after 72 hours. The cyanosis disappeared within 48 hours, and the use of oxygen was discontinued on the fourth hospital day. The blood pressure was maintained at 100-110/70-80. The friction rub disappeared after the first 24 hours but returned on the fifth day and persisted with varying intensity during and following the first period of clinical improvement.

On the afternoon of the thirteenth hospital day, there was a recurrence of anterior chest pain with cyanosis, weakness and profuse sweating. There was no change in the blood pressure, but there was a rise in the heart rate and the friction rub was

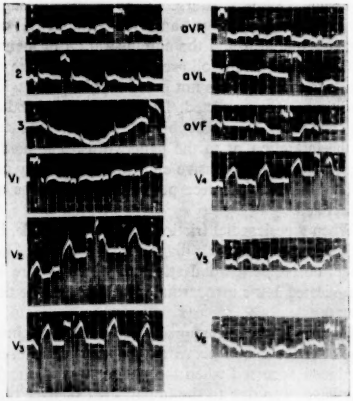


Fig. 2 (case 3).—Electrocardiogram taken after the patient's admission to the hospital, showing changes characteristic of anterior myocardial infarct.

louder than was previously noted. It was felt that the recurrence and persistence of the friction rub might be secondary to oozing of blood from the inflamed pericardial surfaces and that the sudden deterioration in the patient's condition conceivably was due to profuse bleeding into the pericardial sac. The use of bishydroxycoumarin was discontinued, and 72 mg. of menadione sodium bisulfite was given intravenously on the thirteenth and fourteenth days (table 3). On the fifteenth day the temperature rose to 102 F., the pulse rate to 110 and the respiration rate to 25. Repeated electrocardiograms showed no evidence of fresh infarction. A chest film revealed an increase in heart size when compared with a film taken shortly after admission. These findings were consistent with, but not clearly diagnostic of, pericardial effusion. However, inasmuch as there was no evidence of cardiac tamponade, pericardial tap was not done. The patient improved dramatically coincident with return of prothrombic activity toward normal on the seventeenth hospital day. By the nineteenth hospital day the temperature and pulse had returned

TABLE 3.—*Prothrombic Activity at 10 to 20 Per Cent of Normal*

| Hospital Day | Prothrombin Time, Seconds | Prothrombic Activity, Per Cent | Bishydroxycoumarin Dose, Mg. | Menadione Sodium Bisulfite Dose, Mg. |
|---|---|---|---|---|
| 1 | .. | .... | ... | .. |
| 2 | 21 | 50 | 300 | .. |
| 3 | 23 | 25 | 0 | .. |
| 4 | 20 | 60 | 200 | .. |
| 5 | 28 | 13 | 0 | .. |
| 6 | 24.1 | 20.5 | 100 | .. |
| 7 | 17.5 | 100 | 100 | .. |
| 8 | 24 | 19 | 100 | .. |
| 9 | 30 | 5.5 | 0 | .. |
| 10 | 25 | 16.5 | 100 | .. |
| 11 | 21 | 44 | 100 | .. |
| 12 | 26 | 15 | 50 | .. |
| 13 | 28 | 12.5 | 50 | 72 |
| 14 | 26.8 | 13.5 | 0 | 72 |
| 15 | 23.2 | 22 | 0 | .. |
| 16 | 23 | 22 | 0 | .. |
| 17 | 18.8 | 69 | 0 | .. |

to normal and the friction rub had disappeared. Thereafter the clinical course was uneventful. The patient was discharged on the forty-second hospital day.

## COMMENT

A review of the literature reveals that all reported cases of hemopericardium complicating myocardial infarction were due to rupture of the myocardium or of a coronary vessel. A review of the autopsy records at the Beth Israel Hospital of 160 cases of acute myocardial infarction without bishydroxycoumarin therapy similarly showed the occurrence of hemopericardium only when myocardial rupture was present. Although petechiae and injection of the epicardium were not infrequently noted and in 19 cases slightly blood-tinged pericardial fluid was found, frank gross hemorrhage into the pericardial cavity without rupture was noted only in the bishydroxycoumarin-treated patients. The conclusion appears warranted that in these cases bishydroxycoumarin was at least partly responsible for the hemopericardium.

Bishydroxycoumarin has two recognized physiological effects: 1. It interferes with the formation of prothrombin by the liver, resulting in a decreased concentration of prothrombin in the blood [6] and thereby causing a decrease in the production of the serum prothrombin conversion accelerator reported by Alexander and his associates [7] and a prolongation of the clotting time, as measured in siliconized equipment.[8] 2. In moderate to large doses it causes dilation of capillaries, small arteries and veins.[9] Except in the event of massive doses, which cause death within a few hours without any previous demonstrable effect upon prothrombin activity or the

6. Richards and Cortell.[2c] Bingham and others.[2d] Link, K. P.: The Anticoagulant from Spoiled Sweet Clover Hay, in Harvey Lectures, 1943-44, Lancaster, Pa., Science Press Printing Company, 1944, vol. 39, p. 162.

7. Alexander, B.; de Vries, A., and Goldstein, R.: A Factor in Serum Which Accelerates the Conversion of Prothrombin to Thrombin: II. Its Evolution with Special Reference to the Influence of Conditions Which Affect Blood Coagulation, Blood **4**: 739 (June) 1949.

8. Margulies, H., and Barker, N. W.: The Coagulation Time of Blood in Silicone Tubes in Patients Receiving Dicumarol, Am. J. M. Sc. **218**: 52 (July) 1949.

9. Rose and others.[2a] Richards and Cortell.[2c] Bingham and others.[2d] Dale, D. U., and Jaques, L. B.: The Prevention of Experimental Thrombosis by Dicumarin, Canad. M. A. J. **46**: 546 (June) 1942.

appearance of hemorrhagic phenomena,[2c,d] all the toxic signs and symptoms and the parenchymatous changes that have been reported are secondary to hemorrhage resulting from the hypoprothrombinemia and vasodilatation. In animal experiments [10] and in cases of bishydroxycoumarin poisoning,[11] when the prothrombin is markedly reduced, extensive hemorrhage has been observed in every tissue and body cavity, including the pericardial space. Pericardial hemorrhage, however, has been noted only in the experiments reported by Quick,[12] and in the case reported by Duff and Shull.[13] In this connection the studies of Blumgart and others [2e] on the effect of bishydroxycoumarin on experimentally produced myocardial infarction in dogs is noteworthy. In these animals with myocardial infarction and surgically traumatized pericardium, marked hypoprothrombinemia was produced by the administration of this drug. Although other hemorrhagic phenomena occurred, there were no instances of bleeding into the pericardial sac. Quick [12] found that in rabbits, when the prothrombin time was less than 19 seconds (normal prothrombin time is 6 seconds), the animal's blood could prevent cardiac bleeding from a heart puncture. When the prothrombin time was 24 seconds or more, fatal hemopericardium invariably occurred. In the case of bishydroxycoumarin poisoning, with extensive hemorrhagic phenomena, reported by Duff and Shull,[11d] 40 cc. of serosanguineous fluid was present in the pericardial sac; there were petechiae in the right ventricle and right atrium, and a diffuse hematoma was present in the atrial wall.

The reported complications of anticoagulant therapy in myocardial infarction when the prothrombin is kept at the "optimum" level have been limited to relatively mild hemorrhagic phenomena: epistaxis, hemoptysis, guaiac-positive stools, hematuria, purpura, hematomas and hemarthrosis.[14] It is noteworthy that no instances of hemopericardium in bishydroxycoumarin-treated patients with acute infarction have been reported. It is probable, however, that hemopericardium has been observed in such cases but that its significance has not been appreciated. In the presence of fibrinous pericarditis, a common complication of acute myocardial infarction, the constantly moving, vascular, granulating serous surface would appear to provide conditions that predispose to bleeding when severe hypoprothrombinemia and vasodilatation are produced by bishydroxycoumarin. However, the extensive adhesive pericarditis found in cases 1 and 2 suggests that the organization of the fibrin deposited from blood oozing into the pericardial space may result in widespread pericardial adhesions. This would tend to inhibit extensive hemorrhage and tamponade in most cases and may account for the infrequency of extensive hemopericardium.

The literature referred to [15] clearly indicates that the clotting defect produced by bishydroxycoumarin may itself result in pericardial hemorrhage even in the absence of antecedent pericarditis. Nevertheless, it should be noted that vascular collapse, icterus, congestive heart failure and renal insufficiency were present in our cases. Since these conditions predispose to hemorrhage, the possibility that they enhanced the tendency toward bleeding cannot be excluded. This consideration must not be overlooked when one is deciding whether or not a patient with acute myocardial infarction is to receive bishydroxycoumarin and what the dosage schedule is to be.

The unusual persistence of a pericardial friction rub in the proved case of hemorrhagic pericarditis (case 1) and in the one suspected case (case 3) suggests that a continual oozing of a small amount of blood from the involved pericardial surfaces may have occurred for days. This opinion is confirmed by the postmortem findings in the first case. The sudden change in the clinical course, as characterized by chest pain, fever, tachycardia, cyanosis, vascular collapse and venous distention in the presence of a persistent pericardial friction rub, suggests profuse hemorrhage into the pericardial space. This possibility was not suspected in the first case, and cardiac tamponade proved to be the immediate cause of death. The similar clinical course in the third case suggested pericardial hemorrhage, and the withdrawal of bishydroxycoumarin and the administration of menadione sodium bisulfite were followed by recovery. In the second case a friction rub was not heard and hemorrhagic pericarditis was not suspected. The occurrence of abdominal pain and shock were probably due either to the extension of the infarction or to the pancreatitis. The hemopericardium was not extensive enough to cause any cardiac embarrassment. The free pericardial space was almost obliterated.

When a pericardial friction rub is not audible, it may be impossible to make a diagnosis of pericardial hemorrhage, unless pericardial effusion, which is rare in uncomplicated acute myocardial infarction, can be demonstrated.

In case 1, the pronounced rise of the prothrombin time after the use of bishydroxycoumarin had been discontinued occurred when the patient was in shock and may have been due to the impairment of liver function secondary to congestion and shock.[16] The unusual response to a small dose of bishydroxycoumarin in the second case was probably related to impaired renal function. It has been shown experimentally that a decrease in renal function results in enhancement and prolongation of the hypoprothrombic effect of bishydroxycoumarin.[16]

It should be noted that the prothrombin times and prothrombic activities in the third case were well within the recommended therapeutic ranges when the suspected bleeding occurred. In a previous communication by Alex-

10. Rose and others.[2a] Bollman and Preston.[2b] Richards and Cortell.[2c] Bingham and others.[2d] Blumgart and others.[2e]

11. (*a*) Shleven, E. L., and Lederer, M.: Uncontrollable Hemorrhage After Dicumarol Therapy with Autopsy Findings, Ann. Int. Med. **21**: 337 (Aug.) 1944. (*b*) Thorsen, G.: Dicumarol Poisoning with Relapse: Report of a Case, Lancet **2**: 420 (Sept. 20) 1947. (*c*) Draper, A. J., Jr.: Dicumarol Poisoning, J. A. M. A. **136**: 171 (Jan. 17) 1948. (*d*) Duff, I. F., and Shull, W. H.: Fatal Hemorrhage in Dicumarol Poisoning with Report of Necropsy, J. A. M. A. **139**: 762 (March 19) 1949.

12. Quick, A. J.; Honorato, R., and Stefanini, M.: The Value and the Limitation of the Coagulation Time in the Study of the Hemorrhagic Diseases, Blood **3**: 1120 (Oct.) 1945.

13. (*a*) Duff and Shull.[11d] (*b*) Since the preparation of this manuscript two more cases of hemopericardium occurring in bishydroxycoumarin-treated cases of myocardial infarction have been reported by Nichol, E. S.: The Risk of Hemorrhage in Anticoagulant Therapy, Ann. West. Med. & Surg. **4**: 71 (Feb.) 1950.

14. Wright and others.[1a] Wright.[1b] Glueck and others.[1c] Parker and Barker.[1d] McCall.[1e]

15. Duff and Shull.[11d] Quick and others.[12]

16. Richards, R. K., and Steggerda, F. R.: Dicumarol in Rats with Impaired Liver and Kidney Function, Proc. Soc. Exper. Biol. & Med. **52**: 358 (April) 1943.

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ander, de Vries and one of us (R. G.) [17] the methods of prothrombin determination and their clinical significance have been critically evaluated. It was pointed out that wide fluctuations of prothrombin concentration may occur (cases 2 and 3) in patients receiving bishydroxycoumarin.

The discontinuance of bishydroxycoumarin therapy and the intravenous administration of large amounts of vitamin K have been shown to have little effect upon the prothrombin level for at least 10 to 12 hours [18] and may not result in normal levels for several days. (More recently, vitamin $K_1$ oxide has been demonstrated to be much more effective than other preparations in bishydroxycoumarin-produced hypoprothrombinemia.[19] Although such treatment may suffice when there is only slight oozing into the pericardial sac, when more profuse bleeding occurs transfusion of blood or plasma is indicated to correct the deficiency in prothrombin. Transfusions have a temporary effect and should be repeated until the normal mechanism for the production of prothrombin, stimulated by the administration of vitamin K, can maintain satisfactory levels of prothrombin. The course of treatment can best be guided by frequent determinations of the prothrombin time. If cardiac tamponade develops, a pericardial tap should be done. It is important that the prothrombic activity of the blood be kept close to normal levels after such a procedure in order to avoid bleeding secondary to the procedure.

## SUMMARY AND CONCLUSIONS

Hemopericardium has been observed during the course of bishydroxycoumarin therapy for acute myocardial infarction. Two cases of proved and one of suspected hemopericardium are reported.[20] Cardiac tamponade was the immediate cause of death in one of the patients.

The diagnosis of hemorrhagic pericarditis should be suspected in the presence of (1) a prolonged and persistent or recurrent friction rub, (2) recurrence of cardiac pain, (3) vascular collapse accompanied with distended neck veins and (4) demonstration of pericardial effusion. The continuation of bishydroxycoumarin therapy in case of myocardial infarction with persistent pericardial friction rub may be hazardous.

Bishydroxycoumarin, by causing severe depression of prothrombic activity and vascular dilatation, predisposes one to hemorrhage, of which a potent source is found in the constantly moving granulating serous surfaces of the inflamed pericardium. Furthermore, multiple factors that interfere with hemostasis are commonly present in acute myocardial infarction, and these must be evaluated before bishydroxycoumarin is administered or the dosage schedule is decided on. The necessity for rigid control of bishydroxycoumarin therapy is emphasized.

Hemorrhage into the pericardium in bishydroxycoumarin-treated patients with acute myocardial infarction is an emergency, and every physician using the drug should be aware of the possibility of this serious complication.

The treatment of bishydroxycoumarin poisoning should include withdrawal of bishydroxycoumarin and should include the intravenous injection of vitamin K (preferably vitamin $K_1$ oxide) and the repeated transfusion of blood or plasma until the prothrombin time reaches normal levels and remains there. If cardiac tamponade develops, a pericardial tap should be done.

17. Alexander, A.; de Vries, A., and Goldstein, R.: Prothrombin: A Critique of Methods for Its Determination and Their Clinical Significance, New England J. Med. **240**: 403 (March 17) 1949.

18. James, D. F.; Bennett, I. L.; Scheinberg, P., and Butler, J. J.: Studies on Dicumarol in Human Beings: Its Neutralization by Vitamin $K_1$ Oxide, Menadione Bisulfite, Synkayvite and Blood, Am. J. Med. **4**: 455 (March) 1948.

19. (*a*) Miller, R.; Harvey, W. P., and Finch, C. A.: Antagonism of Dicumarol by Vitamin K Preparations, New England J. Med. **242**: 211 (Feb. 9) 1950. (*b*) Davis, W. A.; Frank, H. A.; Hurwitz, A., and Seligman, A. M.: Intravenous Use of Vitamin $K_1$ Oxide, Arch. Surg. **46**: 296 (Feb.) 1943.

20. Since the preparation of this manuscript, two more instances of hemorrhagic pericarditis occurring in bishydroxycoumarin-treated patients with acute myocardial infarction have been found at postmortem examination. There was no evidence of rupture of the myocardium or of any coronary vessels in either case.

# HISTOPLASMOSIS, TUBERCULOSIS AND COCCIDIOIDOMYCOSIS

*W. G. Beadenkopf, M.D.*
*and*
*Clayton G. Loosli, M.D., Chicago*

The present concepts of histoplasmosis have resulted, in large part, from a more critical examination of disease processes that were formerly considered to be almost exclusively of tuberculous origin. Prior to 1945 the infrequent reports of cases of histoplasmosis suggested little association with tuberculosis aside from the pathological impression that each appeared, usually, as a chronic granulomatous infection. By 1945, however, evidence had accumulated for the existence of pulmonary calcifications demonstrated roentgenologically in a large number of persons, insensitive to tuberculin, who lived in middle western and contiguous states.[1] Furthermore, to add emphasis to the problem of such calcifications in this area, an analysis of draft board chest roentgenograms, reported in 1943 showed that the Middle West was the region of highest prevalence of this condition in the United States.[2] Such a geographic distribution did not correspond at all well with tuberculosis mortality.[3] Following the observations of Tager and Liebow,[4] and at the suggestion of Smith,[5] Christie and Peterson [6] and Palmer [7] were readily able to show that most patients with pulmonary calcification of this puzzling origin were not only sensitive to the antigen histoplasmin but also had spent most of their lives in middle western states.

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The postulate was thus implied that histoplasmosis was not a disease that was limited to a rare and fatal form but that it might be widespread and include, in addition to its fatal form, a range of mild pulmonary infections that would frequently result in lung calcifications. A parallelism with tuberculosis was thus established.

The infection that is defined as histoplasmosis is caused by the fungus Histoplasma capsulatum. The organism was proved a cultivable fungus by DeMonbreun in 1934.[8] A specific antigen was extracted from broth filtrates of cultures, in 1941, by two groups of investigators,[9] and the material became employed as a skin-testing antigen in a manner similar to that in which tuberculin is used. This antigen, histoplasmin, has proved invaluable in delineating the Lower Mississippi Basin as the endemic area for histoplasmosis and in suggesting other endemic areas outside the United States. Histoplasmin has also been of value in distinguishing between tuberculous and histoplasmotic infections in patients with pulmonary calcification or infiltrates.

## EPIDEMIOLOGY

The area endemic for the disease in the United States has been studied by many interested groups during the past five years. Although the mode of infection is still far from clear, there are important epidemiological aspects of histoplasmosis that are known today, aspects which will probably mark out the direction of future, more conclusive work.

As a result of histoplasmin skin-testing surveys,[10] a degree of infection is indicated to exist among the residents of the Mississippi Valley that frequently exceeds 50 per cent. In fact, in certain counties of Illinois, young adult women and men have shown rates of sensitivity above 95 per cent.[11] The Mississippi Basin regionalization of histoplasmosis is distinctly unlike the geographic distribution of tuberculosis, as illustrated by mortality rates [3] or tuberculin sensitivity rates.[12] Such a type of regionalization as that which exists for histoplasmosis corresponds exceedingly well, however, with the geographic distribution of pulmonary calcifications,[13] as previously indicated.

A high rate of infection has been attained within this endemic area usually by the time of adolescence. Infants have shown negligible rates of sensitivity, but during the first decade of life substantial rates have been found of approximately 40 to 60 per cent,[14] depending on the local area. Women have been found, in general, to have slightly lower rates of infection than do men.[15] Negroes have been found to have approximately the same infection rate [12a] or a rate slightly lower [10c] than that for whites. This racial similarity of the histoplasmin rates is significantly unlike the great racial difference in tuberculin sensitivity rates and suggests that economic factors are not so important in the acquisition of a H. capsulatum infection. Also, unlike tuberculosis, the histoplasmosis infection rate for urban residents is not higher than that for rural dwellers. Indeed, an indication of higher rural rates has been reported for Ohio.[10d]

The practical point of whether histoplasmosis is communicable from person to person is not settled. However, the indications at present are that this disease is not generally so transmitted. Family studies of Kansas City residents showed only slight indication that, if one child of a family were infected, his siblings would be more likely than not to be infected.[16] Such evidence against interpersonal infection stands in sharp contrast to the results of comparable studies of tuberculosis by Opie, McPheddran and their associates.[17] Evidence that families are not usually attacked as units by the H. capsulatum fungus indicates also that the dissemination of histoplasmosis has little in common with the mode of spread of several other classes of disease that usually attack family units or small groups: sputum-disseminated diseases other than tuberculosis, the milk-borne, meat-borne and the usual pet-borne and rodent-borne diseases. During recent months a fatality from histoplasmosis was reported in Decatur, Ill.,[18] that occurred in a 5 month old identical twin girl. Though kept in the same crib with the ill sister during the first two weeks of a four week illness, the surviving twin girl had no detectable illness, did not react to histoplasmin and is well today. However, this episode cannot be considered convincing, by virtue of the absence of any open lesion on the body surface of the sick baby and little or no pulmonary involvement.

Additional indications against interpersonal infection by the H. capsulatum fungus exist in the geographic distribution of infected populations. If family units formed foci for infection, as they have been shown to do for tuberculosis,[17] there would be expected a more spotty and less regionalized endemic area. For tuberculosis a more spotty geographic distribution does exist, though

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10. (*a*) Palmer, C. E.: Geographic Differences in Sensitivity to Histoplasmin Among Student Nurses, Pub. Health Rep. **61**: 475, 1946. (*b*) Christie, A., and Peterson, J. C.: Histoplasmin Sensitivity, J. Pediat. **29**: 417, 1946. (*c*) Furcolow, M. L.; High, R. H., and Allen, M. F.: Some Epidemiological Aspects of Sensitivity to Histoplasmin and Tuberculin, Pub. Health Rep. **61**: 1132, 1946. (*d*) Prior, J. A., and Allen, M. F.: Geographic Distribution of Histoplasmin and Tuberculin Reactors Among Ohio State University Freshmen and Student Nurses Training in Columbus, Ohio Hospitals, ibid. **62**: 1608, 1947. (*e*) Bunnell, I. L., and Furcolow, M. L.: Variations in Histoplasmin Sensitivity in Certain Cities in Eastern Kansas, ibid. **63**: 1298, 1948. (*f*) Beadenkopf, W. G.; Loosli, C. G.; Lack, H.; Rice, F. A., and Slattery, R. V.: Tuberculin, Coccidioidin, and Histoplasmin Sensitivity in Relation to Pulmonary Calcification, ibid. **64**: 17, 1949.

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it may be attributed, in part, to more intensive case reporting.[3] However, for histoplasmosis the distribution is strikingly regionalized, in a manner similar to the regionalization of coccidioidomycosis in the San Joaquin Valley of California.[5] For this reason histoplasmosis might be expected to be spread, like coccidioidomycosis. Indeed, we have recently suggested [11] a possible method of natural infection by H. capsulatum that, in brief, consists of: (*a*) dissemination of the soil-fungus mixture by floods in the Mississippi Valley, and (*b*) after drying, a further dissemination of the dried mixture by winds, resulting in air-borne infection.

Evidence from observations of both animal and human infections with the fungus is being accumulated to show that, within certain limits, which are discussed below, a positive histoplasmin skin test means a past or present histoplasmotic infection. In this way, the test resembles the tuberculin skin test used at diagnostic strengths.[19] There is resemblance, also, in the fact that critical illnesses resulting from several causes, old age—and, particularly, both factors in combination — depress sensitivity to both histoplasmin and tuberculin.[20] The histoplasmin skin test has certain limitations in specificity in the presence of infection by two other fungi, Coccidioides and Blastomyces,[21] apparently due to cross sensitivity with these fungi.[22] Both histoplasmin and tuberculin skin tests appear relatively independent and specific, however, each in the presence of infection by the other organism. Chinese students at the University of Chicago who reacted to tuberculin almost 100 per cent showed a negligible reaction rate to histoplasmin.[12a] Residents of certain Illinois counties who reacted to histoplasmin almost 100 per cent likewise showed a negligible reaction rate to tuberculin.[11] Some association between tuberculin and histoplasmin tests has been found among student nurses in certain cities of the United States, but this association is slight and, even if due to cross sensitivity, would seldom confuse diagnostic procedures.[23]

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## SYMPTOMATOLOGY

It may be possible in the future to predict with accuracy the probabilities of various disease processes and symptom patterns that can be expected after an infective dose of H. capsulatum. If interpersonal exchange of the disease continues to be unlikely or rare, such a prediction in the form of a spectrum of the disease should be as attainable as that excellent picture of coccidioidomycosis symptomatology that was worked out by Smith and his associates [24] during the recent war.

An attempt today to construct a disease spectrum for histoplasmosis must be extremely tentative and offered only with the understanding that changes of generous proportions will not only be required later, but perhaps even at present will be insisted on by others in the field. Clinical reports are appearing in increasing frequency today describing a wide variety of infections that, altogether, make any general description of the disease uncertain. Furthermore, the whole gamut of illness severity, from a symptomless infection to a rapidly fatal generalized infection, seems to characterize histoplasmosis.

The first and mildest portion of a spectrum, the symptomless infection, grossly defined as it is in a medical history as "no previous significant illness," appears to occur in the majority of persons after infection by the fungus. Attempts to detect illness have generally been unsuccessful even among students who have been observed to develop histoplasmin sensitivity, i. e., to convert from a nonreactor to a reactor within a period of months.[25] Some assistance in identifying the disease process in this type of infection has been obtained with information from serial complement fixation determinations, which employ the mycelian phase antigen,[26] the yeast phase antigen [27] and the collodion agglutination test.[28] Suggestions of activity, obtained serologically, have intensified cultural search and search for specific organ lesions and functional abnormalities. However, the principal means of identifying the asymptomatic infection has been until now the positive skin test reaction, and it has represented the only sign of disease in the majority of infected persons.

The second portion of the spectrum appears to be the frequently encountered pulmonary infection. The calcified lesion that appears in chest roentgenograms has been demonstrated usually in over one fourth of adults infected with H. capsulatum.[29] Many of this group has no illness apparent to them and symptomatically could be placed in the first portion of the disease spectrum. However, there is an increasing number of reports describing various types of chronic pulmonary infiltrates, with and without cavitation, that are either proved to be

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3. (*a*) Long and Stearns.[2] Beadenkopf and others.[11] Loosli and others.[12a] (*b*) Dickie, H. A., and Clark, E. A.: Histoplasmin and Tuberculin Sensitivity in Relation to Pulmonary Calcifications Among University of Wisconsin Students, Ann. Int. Med. **28**: 1087, 1948.

14. (*a*) Christie and Peterson.[6] Furcolow and others.[19c]

15. Furcolow and others.[19c] Prior and Allen.[30d] Beadenkopf and others.[19c] Dickie and Clark.[32b]

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26. (*a*) Tenenberg, D. J., and Howell, A.: A Complement Fixation Test for Histoplasmosis: I. Technic and Preliminary Results on Animal Sera, Pub. Health Rep. **63**: 163, 1948. (*b*) Furcolow, M. L.; Bunnell, I. L., and Tenenberg, D. J.: A Complement Fixation Test for Histoplasmosis: II. Preliminary Results with Human Sera, ibid. **63**: 169, 1948.

27. (*a*) Saslaw, S., and Campbell, C. C.: The Use of Yeast Phase Antigens in a Complement Fixation Test for Histoplasmosis: I. Preliminary Results with Rabbit Sera, J. Lab. & Clin. Med. **33**: 811, 1948. (*b*) Campbell, C. C., and Saslaw, S.: Use of Yeast Phase Antigens in a Complement Fixation Test for Histoplasmosis: III. Preliminary Results with Human Sera, Pub. Health Rep. **64**: 551, 1949.

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29. (*a*) Christie and Peterson.[6] (*b*) Palmer.[19] Beadenkopf and others.[30f]

histoplasmosis or that display strong suggestion of the diseases.[30] Like tuberculosis, the infiltrates are found to occur, frequently, without symptoms. In some of the cases reported, the complement fixation test has proved to be of considerable value in distinguishing the causes of these pulmonary infiltrates that roentgenologically could be considered due to either tuberculosis or histoplasmosis. Sputum cultures that show the fungus have supplied final proof.

Pulmonary infiltrates encountered in student nurses who react to histoplasmin and in those who react to tuberculin were compared by Edwards, Lewis and Palmer.[30f] There was a tendency described among the histoplasmin reactors, which has also been found by others [31] to have a nodular type of infiltrate located in almost any area of the lung fields, in contrast to the tendency of the tuberculin reactors to have softer infiltrates, located more toward the apexes. Mediastinal lymphadenopathy was found to accompany the infiltrates of the histoplasmin reactors more frequently than it did the infiltrates of the tuberculin reactors.

Recent reports have shown the H. capsulatum fungus to be responsible for acute pulmonary infiltrates that occurred in association with both generalized and chest symptoms.[30d,h] Such reports suggest histoplasmosis as the cause of some of the atypical pneumonia type of illnesses.

Many of the pulmonary infiltrates, both acute and chronic, which have been demonstrated and considered to be histoplasmosis, can be expected to develop calcified bodies in the lung fields. Some cases have been followed for several years, and the development of calcification has been demonstrated.[32] On the other hand, some portion of the pulmonary infections probably clears up entirely, as indicated roentgenologically, and the patients retain only skin sensitivity as evidence of their infections.

The third portion of the spectrum of symptoms is the infection not involving the lungs primarily. Reports have described nonfatal infections in a variety of locations: the skin, mouth, tongue,[33] larynx,[30d] penis [33] and several structures in the eye,[34] to mention some of the locations. An estimate of the proportion represented by this varied group in the general disease spectrum is not possible, and it may prove inaccurate to estimate the number as less than that of pulmonary infections.

Closely associated with the nonpulmonary type of infections are the nonfatal generalized infections that have been reported.[35] This type, by virtue of the generalized infection, also resembles the final portion of the spectrum, the fatal generalized infection, in that it frequently shows involvement of the lymph nodes, liver and spleen, as manifested by enlargement of these organs. The severity of these general infections has varied from an asymptomatic infection to a critical illness. Pulmonary infiltrates have frequently accompanied the general infections. As Saslaw and Campbell have pointed out,[28b] serial serological examinations could be of considerable assistance in identifying the general infection and may prove of value in promoting the identification of some cases of "fever of unknown origin."

The final, fourth portion of the disease spectrum, probably infecting the smallest number of persons, is the fatal generalized infection. This form includes most of the rarely detected cases of histoplasmosis recorded prior to 1945.[36] Some of these infections are exceedingly rapid in their course, especially in infants, with death occurring as rapidly as within several weeks after the onset of symptoms.[37] In adults, however, the duration of illness extends usually for periods of months to several years. One phase of the fatal form consists of the H. capsulatum infection that runs concomitantly with a second, usually earlier diagnosed, disease. Tuberculosis,[30d] lymphoma [36] and other diseases have been found in combination with histoplasmosis.

A parallelism between histoplasmosis and coccidioidomycosis has been pointed out by others.[38] Some clinical dissimilarities between the diseases persist at this time, however: (*a*) the rarity or absence of erythema nodosum and bone lesions with histoplasmosis, in contrast to their occurrence with coccidioidomycosis, and (*b*) the presence of gastrointestinal ulcerations with histoplasmosis in contrast to their absence in coccidioidomycosis.[39]

## SUMMARY

In this discussion the similarities and dissimilarities in the epidemiology and disease characteristics of histoplasmosis, tuberculosis and coccidioidomycosis have been given. In general, these diseases present many similarities. Each affects many persons, without detectable signs or symptoms beyond skin sensitivity development; each is prone to attack the lungs, producing either acute or chronic infiltrates that are known to be frequently indistinguishable roentgenologically, and each has a relatively uncommon form consisting of a fatal disseminated infection. No comparative data concerning the course and fatality rates of the three types of infection are available. Although there are certain fundamental differences in the epidemiology of histoplasmosis, tuberculosis and coccidioidomycosis, the above similarities are of such importance that all three diseases should be considered in any tuberculosis control program.

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# SUCTION SOCKET

## PROPER SELECTION OF PATIENTS FOR ABOVE KNEE ARTIFICIAL LEG

*Charles O. Bechtol, M.D., Oakland, Calif.*

The purpose of this paper is to present facts of clinical importance in the prescription and fitting of the suction socket above knee artificial leg. The suction socket has been shown to be advantageous as a fittting method for most above knee amputees. The actual fitting and alignment of a section socket leg involves special problems of functional anatomy and gait.[1] Excellent historical, statistical and technical reviews are available on the suction socket method of fitting, and these aspects of the problem will not be discussed in this paper.[2] Four subjects of clinical importance will be discussed: (1) the time required for the fitting of the suction socket, (2) the types of stumps in which difficult fit may be expected, (3) the type of surgical technique in amputation which produces a stump most favorable for fitting the suction socket and (4) the postoperative care and preparation for the fitting of a suction socket.

### TIME REQUIRED FOR FITTING OF THE SUCTION SOCKET

The fitting of a suction socket above knee prosthesis is time consuming because the suction socket requires a more accurate fit than the conventional type of prosthesis. Suction is maintained by an accurate fit. Weight bearing on the ischial seat is comfortable only if this seat is accurately placed. Since the bony and muscular anatomy is quite variable from one stump to another, there is no single standard socket pattern suitable for all amputees.

In contrast to the atrophy and shrinkage of muscle encountered with the use of the belt type of leg, the muscles usually become hypertrophied and firm with the use of the suction socket leg. This necessitates enlarging of the socket, since, if the socket is not enlarged, a severe edema of the end of the stump will occur. Some sockets have been enlarged from 10 to 20 times during the first year or two of wear. This is particularly common in stumps in which the musculature is very flabby at the time of initial fitting.

Because of the added fitting time and the necessary returns to the limb shop for enlargement of the socket, the suction socket should not be recommended for any patient who cannot spare this additional time. This should be thoroughly explained to any patient who lives at a distance from the limb dealer or whose business commitments might interfere with frequent returns for fittings. Patients who are uncooperative or who are irresponsible should likewise be discouraged from choosing the suction socket.

### TYPES OF STUMPS WHICH ARE DIFFICULT TO FIT

Almost any type of stump can be fitted, provided the amputee is cooperative and willing to return for the necessary fittings. In some difficult stumps it has taken a year or more to finally achieve a satisfactory fit. Those who have rejected the suction socket, on the other hand, have almost never done so on the basis of fitting difficulties alone. Rejection of the suction socket is almost always a combination of the factors of difficulty in fitting, plus the fact that the patient is unable to return at frequent intervals for revisions of the shape of the socket. Therefore, if any of the stump conditions mentioned below are present, the amputee should be specifically warned that his fitting will be slower than usual and that he may expect to return many times for revisions of the shape of the socket.

Flabby stumps are both difficult to fit and require frequent enlargement of the socket during the initial period of fit. A flabby stump may be due either to atrophic muscle or excessive subcutaneous fat or both. This type of stump allows marked rotation of the soft tissues even when the muscles are tensed. The stump should be tested by grasping it firmly with both hands and rotating the soft tissues to the left and right, first with the stump muscles relaxed, and then with the stump tensed. A rotation

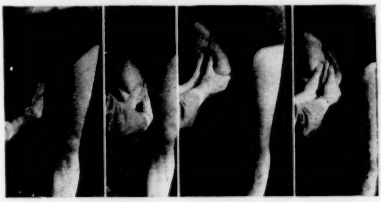

Fig. 1.—Test for firmness of the stump and degree of soft tissue rotation. *A*, a flabby stump, showing marked degree of soft tissue rotation. This occurs even though the muscles are tensed. *B*, a firm stump, showing little rotation.

which allows the skin to move more than 2 or 3 inches (5 or 7.6 cm.) in either direction indicates that some difficulty in fitting may be expected. If the rotation can be carried out through approximately 90 degrees, a very marked amount of stump growth will undoubtedly follow the use of the suction socket, and the patient should be warned that he will have to return many times for enlargement of the socket.

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Department of Orthopedic Surgery and the Biomechanics Group, University of California.

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Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The Statements and conclusions published by the author are the result of his own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

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Short stumps in which the femur measures less than 5 or 6 inches (12.7 or 15 cm.) from the top of the trochanter are difficult to fit. Though the fit may be satisfactory for walking, suction is frequently lost when sitting down or in getting in or out of an automobile. It must be emphasized, however, that the suction socket method of fitting offers particular advantages to short stumps because of the increased control and reduced piston action, and the amputee with a short stump should be discouraged only if he is unable to spend the necessary time for fitting.

Very long stumps resulting from the Callender or Gritti-Stokes type of amputation present a fitting problem, since the necessary free air space at the end of the socket interferes with the placement of the usual knee mechanism in the artificial leg. Since there is no muscle padding over the bone end, a very accurate fit is necessary in the bottom of the socket.

Stumps in which the muscles have not been fixed over the end of the bone present a problem, since these muscles may retract rather markedly during certain phases of walking and lead to excessively high negative pressure within the socket. The marked stump muscle retraction may be repaired by a surgical revision of the stump, suturing the muscles over the bone by means of stitches through their fascia.[3] The excessive negative pressure may also be reduced by the use of the variable leak rate type of valve.

Fig. 2.—Examples of retraction of the stump end when the muscles are tensed (right). The change in shape and size of the stump makes fitting difficult.

## AMPUTATION TECHNIQUE

The suction socket can be most easily fitted if the femur is amputated 3 to 4 inches (7.6 to 10 cm.) above the adductor tubercle, and above the supracondylar flare of the femur. In any amputation above this level, all the bone length possible should, of course, be saved. The muscles should not be allowed to retract but should be closed over the bone end without tension by means of sutures placed in the fascia of the muscle. The deep fascia of the thigh and the skin are then closed over the muscles by separate sets of sutures. Inman,[4] reports that this is the standard procedure in preparing a stump for a suction socket in Germany, where the suction socket has been used for a number of years.

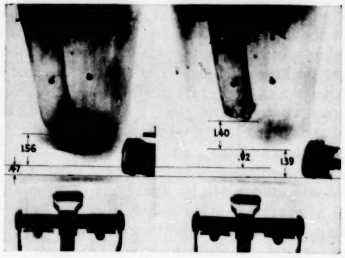


Fig. 3.—Roentgenograms of a stump actually in a suction socket, showing the effect of marked muscle retraction. Weight bearing is shown on the left. On the right, piston action producing a high negative pressure is shown, in a nonweight bearing condition with the muscles tensed.

## POSTOPERATIVE CARE

The sutures should be removed at the end of the tenth day after the operation. During these 10 days the patient should lie on his face in bed at least one hour a day to prevent the beginning of a flexion contracture of the hip. After removal of the sutures, the stump should be wrapped with an elastic bandage. This wrapping must cover the end of the stump by means of reverses, and it must come up to the inguinal fold in front of the leg and the gluteal fold behind, so that the subcutaneous tissues of the leg will be of uniform thickness. If only the lower portion of the stump is wrapped, the fitting of a suction socket will be considerably more difficult. In order to maintain the position of the wrapping high at the top of the stump, it is necessary to put on a spica type of bandage with several turns taken about the waist

Fig. 4.—*A*, layers for closure of thigh amputation. Upper portion shows skin and fascia lata divided at the same level; center shows quadriceps muscle with its overlying fascia; lower portion shows femur divided above the supracondylar flare. *B*, thigh stump with muscular layer closed. In the top part clamps on the anterior fascia lata are seen; in the bottom part, clamps on the posterior fascia lata. Interrupted sutures through the fascia of muscles close the muscles over the femur. There should be minimal dissection of the fascial planes. In *B* it is difficult to distinguish between the fascia lata and the surface of the muscle, because the surface of the muscle has not been disturbed.

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and the top of the stump in a figure of eight. The purpose of the wrapping with an elastic bandage is to prevent the excessive accumulation of subcutaneous fat. The bandage does not interfere with development of the muscles. The stump should be bandaged day and night. The bandage may be removed during exercising or bathing of the stump.

The muscle exercises are divided into two groups: first, those involving the muscles of the hip which have not been disturbed by the amputation; second, those mobilizing muscles of the thigh that have been divided in the process of amputation. When the sutures are removed, active exercise of the hip muscles should be started. Extension and abduction should be particularly stressed, and the hip should be carried through a full range of active motion in all directions. As soon as the end of the stump is nontender and able to tolerate a cuff, exercises against resistance should be started. It is of great importance in older amputees to prevent the formation of hip flexion contracture. The hip flexors should be stretched daily with the patient lying on his face and the stump placed on a pillow. Exercise of the severed muscles of the thigh should also be started 10 days after the operation. These should consist of alternate contractions of the extensor and flexor muscles of the knee. At first, no attempt should be made at vigorous contractions, because of pain and the possibility of disrupting some of the muscle sutures. At the end of six weeks, vigorous contractions of these severed muscles may be started.

Fitting of the suction socket may be started when the site of amputation is completely healed and painless. Fitting may occasionally be started as early as six weeks following amputation, though 8 to 12 weeks is a more usual time for such fitting.

## SUMMARY AND CONCLUSIONS

Unsuccessful attempts at fitting above knee suction socket artificial legs are usually the result of two factors: first, the inability of the amputee to spare the necessary time for fittings; and second, the presence of either a flabby, poorly muscled stump or a very short stump. Difficulty is also occasionally encountered in very long stumps or in stumps with marked retraction of the muscles. On the other hand, even very difficult stumps can be fitted if the amputee is cooperative and persistent in his attempts to obtain the fitting. The amputee can be spared a great deal of lost time and disappointment if these facts are explained to him at the time of prescription of the artificial leg.

The most favorable type of amputation for fitting a suction socket above knee prosthesis is an amputation which is 3 or 4 inches (7.6 or 10 cm.) above the adductor tubercle, and in which the muscles have been approximated over the bone end by means of sutures in the fascia of the muscle.

The most important factors in postoperative care are (1) the prevention of hip flexion contracture, (2) the wrapping of the stump with an elastic bandage and (3) the initiation of active exercise to the hip muscles. The stump-wrapping bandage should completely cover the stump and be high in the inguinal and gluteal fold. To accomplish this, a spica type of bandage around the hip is necessary. Active exercises to the hip muscles beginning 10 days after the operation, together with exercises of the muscles which have been severed, will make the fitting of the suction socket and the gait training of the patient much simpler. The fitting of the artificial leg may be begun between six and 12 weeks after the amputation, as soon as the stump is well healed and painless.

1674 Franklin Street.

## ABSTRACT OF DISCUSSION

DR. ROBERT MAZET, JR., Los Angeles: Dr. Bechtol's presentation is a masterpiece in its brevity. Our ideas have undergone some changes. It was first thought that the top of the socket should be quite rectangular in shape, with a wide and high ischial seat, rather pronounced cutouts for the gluteal and adductor muscles, and extension on the lateral side to just below the top of the great trochanter. A fairly tight uniform fit throughout was considered essential. We have learned that the extreme height laterally is not necessary. This has, therefore, been discontinued. Early in the program, excessive ischial irritation on weight bearing, pressure just distal to the ischium when sitting and loss of suction on sitting were common complaints. Prolongation of the ischial seat laterally, permitting some weight bearing in the gluteal area, and decreasing its height and depth have proven helpful. Its sharp inner border has been rounded off. A shallower gluteal cutout is now used. These modifications have resulted in a loss of some of the rectangular shape. The undercut anteriorly is less pronounced than formerly. The snug fit throughout is not desirable. Edema was often caused, not by a tight fit at the top, but by a tight fit at the distal end. This was particularly noticeable in stumps with partial end-bearing. The explanation for this is not entirely clear. Our buckets are now made with a tight-fitting top, close contact anteriorly and a loose fit between stump and bucket elsewhere. They are somewhat barrel-shaped. Dr. Bechtol mentioned changes in the stump contour. In few cases has the anticipated initial shrinkage in stump circumference occurred. Many stumps have increased in size as the musculature of the thigh developed. Sometimes a relative change has occurred in stumps with a large adductor roll. The roll has been pulled down into the bucket and disappeared. The subcutaneous fat of the roll appears to be compressed and absorbed. At the same time, there is an increase in the subcutaneous fat of the distal portion of the stump. Sebaceous cysts may be prevented by pulling the adductor roll well down into the bucket.

DR. PAUL E. MCMASTER, Los Angeles: In general, our observations in the Los Angeles area coincide with those of Dr. Bechtol. We have had 90 patients who were veterans. Seventeen have been rejected, and 66 have been successfully fitted with suction sockets and are using this prosthesis regularly, most of them for a period of over a year. Seven patients have been fitted, who, for various reasons, have had to change or convert to the conventional type of prosthesis. Our failures have been due to two main causes: uncooperative patients, who can best be described as persons mentally insufficient and unable or unwilling to cooperate, and the inability of some patients, because of occupation or distance, to make and/or keep appointments for the multiple refittings that are necessary for successful results with the suction socket. All our patients whose psychogenic status might be questionable are referred for psychiatric evaluation. This was routine during the earlier stages of our program, and a few patients have been turned down because of unfavorable reports. Bony stumps at least 4½ to 5 inches (10 to 12.7 cm.) from the pubic tubercle are considered the minimal length for satisfactory fitting. We measure from the pubic tubercle, rather than from tip of trochanter, because it is easier, as a rule, to locate accurately. This is the measurement most commonly used by our limb fitters, and it is constant, requiring only that the stump be in normal alignment, neither adducted nor abducted. The optimum amputation site is at about the junction of the middle and lower thirds of the thigh. Knee length or slightly shorter stumps present definite fitting problems and are not desirable. Dr. Bechtol mentioned the need for suturing the muscles over the stump end. It is doubtful, in my mind, if this is necessary. It is estimated that only a very few, if any, of our patients had had this done, and we have had to make no stump revisions to correct exces-

sive retraction of muscles. It was also stated that excessive negative pressure could be reduced by the use of the variable leak rate type of valve. We believe high negative pressure is an indication of improper fitting of the socket, and the improper fitting should be corrected, rather than an attempt made to correct the pressure by valve changes. Also, we believe that the ordinary exhaust type valve, rather than the breathing or two way valve, is, in general, superior. Wrapping the stump with an elastic bandage postoperatively, and carefully carrying this to the inguinal and gluteal regions with a spica type wrapping is important. This, as Dr. Bechtol pointed out, will tend to decrease excessive subcutaneous fat. Many of our older amputees, after having worn a conventional leg, develop large adductor rolls of fat. With careful fitting of a socket and the repeated pulling down of these rolls into the socket with the stump sock, they can in time be made to disappear. Dermatitis of fairly marked degree has occurred in a few of our patients. The apparent causes were excessive perspiration and poor daily hygiene of stump. The former may be helped with silicagel in the socket; also, a breather type valve will help in some cases. The use of a 0.5 to 1 per cent solution of formaldehyde wiped off with alcohol may help. Daily washing with ordinary soap and warm water usually is sufficient to keep stumps in excellent condition. I would like to ask Dr. Bechtol what his experience has been with fitting a suction socket to the arteriosclerotic amputee of the 60 to 70 year group.

DR. CHARLES O. BECHTOL, Oakland, Calif.: Age in itself is no contraindication to the use of the suction socket. Most of our older patients, however, have poor coordination and flabby stumps and may have circulatory difficulty in the remaining leg. These in themselves, may be contraindications to the use of the suction socket. With regard to suturing the muscle over the end of the bone, we have had at least two dozen cases in which the muscles have not been sutured. In all of them, the fitting of the suction socket has been considerably more difficult. The shape of the suction socket is exceedingly variable; there is no rule of any type by which you can lay down standard patterns for the shape. Edema has almost always been due to a tight fit and, strangely enough, a tight fit in the lower portion of the socket. The patient can tolerate fairly tight fit at the top of the socket, but fit must be loose in the lower two-thirds. The variable leak rate valve mentioned is only applicable to about 10 per cent of the suction socket wearers; it is usually applied in those cases in which very marked stump muscle retraction occurs. It should be reemphasized that most amputees feel that the suction socket presents advantages which outweigh any difficulties or delays encountered in fitting.

# REPAIR OF SURFACE DEFECTS OF THE FOOT

## RESURFACING THE FOOT BY PLASTIC SURGERY FOR DEFECTS SUCH AS PLANTAR WARTS AND TRAUMATIC, THERMAL AND RADIATION LESIONS

*James Barrett Brown, M.D.*
*and*
*Minot P. Fryer, M.D., St. Louis*

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Defects and losses of the skin and subcutaneous tissues of the foot cause major discomfort and disability, and trouble continues until there is complete permanent healing. Resurfacing the foot with free grafts and flaps may result in adequate results for function and comfort, but the processes may be technically difficult, and also troublesome for the patient. Therefore, it is important to realize that there are numerous qualifications and limitations of this resurfacing in trying to secure solid permanent closure of even a small defect. Problems encountered, including those found in military surgery, have been recorded,[1] and some of the present material is based on these references.

### ANATOMY OF THE FOOT

In its skin and subcutaneous makeup the sole is a special congenital organ or structure, and is not developed individually. The same sort of tissue does not occur elsewhere in the body (except in the palm), and if it is once lost it can be only substituted for. Tissues transplanted to the sole from other areas do not undergo metaplasia to become a normal sole, nor will walking on the new tissue cause it to do so, and the substituted area will require care and protection to prevent irritation and ulceration. Because of this, transfer of skin from the opposite sole might seem indicated, but the transfer would result in added debilitation in most instances. If hair-bearing skin is transplanted to the sole, the hair will continue to grow, except as it is worn off. This is because the foreign skin does not take on the characteristic of producing the thick keratinized layer that occurs in the normal sole.

The surface over the normal heel cord is also specialized, and, though the skin over the rest of the dorsum is not as specialized, the whole foot including the malleoli and the dorsum requires an intact surface for the protection of these areas. In surgical procedures on the foot, care is taken to keep incisions at a minimum and an attempt made to assure adequate coverage and prompt healing. That deep healing and proper function are dependent on an intact surface is nowhere truer than in the foot.

The sensory nerve supply of the foot is of great importance, and if anesthesia occurs either in scarred or repaired areas, there is apt to be trouble from trauma and ulceration. If nerves remain present in the general area, sensation will develop in both grafts and flaps to a worthwhile protective degree, and the grafts may develop practically normal sensation. But if the nerve supply has been so interrupted that there are no nerves available, there is apt to be chronic ulceration to start with, and it may continue in the repaired area. The care of the anesthetic foot is tedious but must be vigilant if trouble is to be avoided.

From the Department of Surgery, Washington University School of Medicine, St. Louis.

Read before the Section on Orthopedic Surgery at the Ninety-Ninth Annual Session of the American Medical Association, San Francisco, June 29, 1950.

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DIFFERENT METHODS OF REPAIR

Direct suture of the skin of the foot after a loss, especially in the sole, is limited to repair of linear defects, but is not effective over bearing surfaces. In the center of the sole, for example, some excellent results can be obtained; however, deep sutures of any kind are apt to cause trouble, and deep wire is not used because of possible irritation and wart formation. Simple direct suturing and careful strapping and bandaging are essential parts of the operation.

Leaving small wounds open to heal in themselves in the sole may be successful in "silent" areas such as the middle of the arch, but in bearing areas the resultant scar may be so painful that a secondary repair is necessary.

Local or adjacent flaps are used when possible, but as there is little extra skin in the foot, closing a round defect of any size in the sole can be similar to trying to close a knot hole in a board. Care also must be taken in mobilizing any flaps to avoid interrupting an important nerve or blood supply.

Rotated flaps or laterally shifted flaps are good for use in the covering of bearing points and for repairing defects consisting of warts or small scars; but, here again, nerve and blood supply should be considered carefully.

Filleted toe flaps are occasionally utilized, but such amputation procedures should be avoided whenever possible.

Permanent pedicle blood-carrying flaps to increase vascularity in avascular areas are of great service in radiation lesions or in the covering of areas after resecting dense deep scars. These may be rotated flaps in the sole, or over the dorsum or dorsum to sole flaps. This suggestion in the general concept of flaps is the subject of another report to be published.

Free thick split skin grafts are used generally, if there is an adequate subcutaneous pad of tissue to carry the graft and form a supporting cushion. If this pad is present, the repair is better with a free graft surface than any flap transferred from a distance. By this plan much time can be saved and morbidity reduced. Free grafts may be used as a temporary or trial measure in burns, radiation lesions, avulsions and cancer, and a flap put in secondarily if it becomes necessary. The occasional extra operation is well worth while in the consideration of trying to avoid a cumbersome cross leg flap.

This "skin graft dressing" method may save many extremities, and amputation can be left to secondary consideration if nerve and blood vessel supply to even a badly denuded extremity is intact. One of the most dramatic cases of this kind was that of a boy from one of whose feet the entire skin and the anterior third were torn off in a railroad accident. He was brought in for midleg amputation, but instead, the entire remaining part of the foot and the ankle were "dressed" in thick split grafts. The patient's foot was saved by means of this one single operative procedure. His care of the grafted foot was not excessive, even for a growing boy, and, aside from packing his shoe where his toes were missing, he had little difficulty and participated in normal athletics.

Thick split grafts are usually taken from high on the back of the thigh and buttocks with a simple graft knife and suction retractor. Pressure fixation dressings of fine mesh with bismuth tribromophenate (xeroform®), or petrolatum (vaseline®) gauze and surgical waste are carefully applied, fixing ankle and knee joints with adequate padding, gauze rolls and adhesive.

Full thickness grafts may be used if desired, especially for small defects when a suitable one can be obtained from the inguinal region.

Cross leg flaps are considered as a method for repair when other methods will not suffice. These flaps, the same as grafts, do not give a normal sole, because the skin of the flap does not undergo metaplasia into a heavy keratotic sole. Other difficulties in their use are cumbersomeness of procedure and damage to the donor site, necessitating its repair, and use of these flaps may be inadvisable because of the age of the patient, or joint fixation or some other disability.

Repairing donor sites of flaps may give difficulty if the sites are not advantageously selected, and as much disability has been observed resulting from the donor site as from the original trouble.

Fig. 1.—Top, foot after prolonged treatment, including radiation and tedious preparation of abdominal tubed flap (elsewhere), for wart of heel. Bottom, foot after repair with free split graft and permanent pedicle flap from side of foot with graft for donor site of pedicle in one operation. Distant flap was removed without necessity of use.

Delayed flat flaps, considered the safest to transfer, depend on gradual cutting off of the blood supply, taking at least two operations. To completely outline and undermine a flap and raise it on its pedicle and then put it back in its bed does not delay the blood supply of the flap, but simply delays the transfer to a later stage. The usual procedure is to open the long axis in two parallel lines, undermine between, and close the incisions. The distal end is cut across secondarily in three to 10 days and closed, usually under local anesthesia.

The delayed flap is transferred when there is no swelling, induration or redness, and no suggestion of inadequate circulation through the pedicle.

A variation of the above is the implantation of a split graft under the flap at the time it is first elevated in order to have the donor site this much closed when the flap is used, but this method is not often resorted to on this service.

Tubed flaps are started in about the same manner as delayed flat flaps, except that the cut edges are closed

in a tube formation and the open area underneath is grafted or closed. If a large flat "pan cake" is to be used on the end of the tube, this is delayed secondarily, as is the end of a flat flap. If only the tube is to be used, it is not usually necessary to delay the distal end; however, this can be an added precaution.

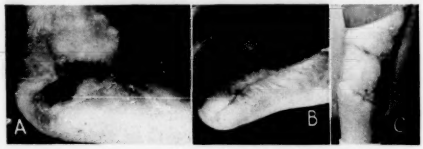


Fig. 2.—*A*, defect of 40 years duration resulting from a railroad accident. *B*, defect, after repair with direct cross leg flap in two operations, one on and one off, and two adjustments of the edges. *C*, donor site from which the flap was taken.

There are several methods of determining evidence of adequate circulation in a tubed flap, the best one of which, as learned by experience, is the finding of no redness, swelling or other sign of failing circulation. Chemical methods depending on injections and determination of absorption of test materials may give information about the tube, proximal to a tourniquet on one end, but will not help for the flat end or "pan cake" if one is used with the flap.

The procedure for combined flat and tubed pedicle flaps is about the same as that described for utilizing a flat area on the end of a tube. The tube in these instances is for ease of transfer, especially if the pedicle has to be twisted.

Cross sole flaps are mentioned only in order to repeat that in a large series they might result more in added disability than in benefit.

Direct cross leg flaps are most useful and simple and are relied on when the requirements of the defect are such that a donor site can be arranged satisfactorily. A short, broad pedicle is used, rather than a long, flat or tubed pedicle; the process is much quicker and easier and more economical, and the repair is possibly somewhat better because the flap is made to order to fit the defect during the first operation rather than by separate procedures. These flaps require that the foot can be carried to the donor site, in the same way that the hand can be carried to the abdomen so that delayed tubed or double pedicle flaps are scarcely ever needed for the hand and forearm. The short broad direct pedicle flap is turned back, and the foot is brought into place and anchored, either with or without dressing the donor site in free grafts.

Sites of flaps for certain defects can be more or less standardized, but each defect is an individual problem. The best site is the one the patient finds the most comfortable through practice, taking into consideration the avoidance of knee joint, nerves, and vessels.

Pocket flaps are ones made by simply opening an area on the leg, through a single long incision, usually made transversely below the knee, and undermining a pocket. These are for the end of the foot when it can be implanted into the pocket through the single opening. The procedure was developed at Valley Forge Hospital and used there extensively in military services with great saving in time. These flaps were often called "slash" flaps, but "pocket" seems more appropriate.

Double heel and toe flaps are utilized along the side of the knee for replacing the front and back of the foot in a single direct flap procedure. A pocket flap can be used for the toe and a direct flap for the knee. These flaps may seem bizarre for civil needs but are not bizarre in military plastic surgery, where resurfacing of the foot is a constant problem.

Jump flaps from the abdomen, with the forearm as a carrier, utilize the broad short direct pedicle method [2] of flap transfer. A large direct flap from the abdomen is put on the forearm and transferred secondarily to the foot.

There are variations of preparation of these flaps, including folding them on themselves to allow an interval between taking up and use on the foot, but the essential principles are the same when the short broad direct pedicle is used for rapid transfer of tissue.

It is necessary to use the thigh for larger flaps or for large flat or tubed flaps, and attention is again called to possible trouble from donor sites on the opposite lower leg. Small flaps, however, can usually be obtained successfully from the opposite lower leg without serious trouble in the donor site.

Dorsum-to-sole flaps are utilized as delayed flaps and, though limited in size and extent of transfer, are very useful around the edges of the sole over bearing points. These flaps may be direct, lateral shifts or delayed pedicles rotated down in place and may be permanent blood-carrying.

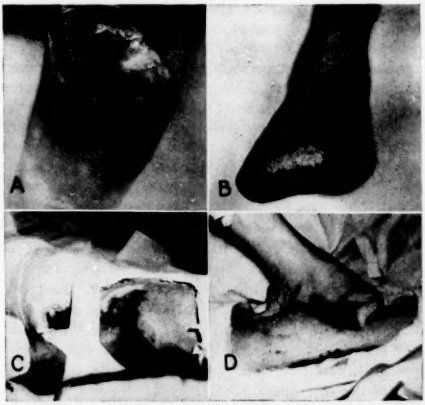


Fig. 3.—*A* and *B*, freezing injury with loss of all toes, and open end of foot, which was repaired with direct cross leg pocket (or slash) flap, in two operations, one on and one off. *C*, illustration of method of fixation of this pocket flap. *D*, illustration of method of using two direct flaps in a single operation for covering freezing injury, loss of toes and heel.

Closed wound flaps are formed by doing a split graft "dressing" of all raw areas. This may be advantageous, but it is not necessary either on the foot or elsewhere in

2. Footnote [1c]. Brown, J. B., and others: Direct Flap Repair of the Arm and Hand: Preparation of Gunshot Wounds for Repair of Nerves, Bones and Tendons, Ann. Surg. **122**: 706-715 (Oct.) 1945.

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the body if adequate dressing care can be given the operative field. Serious infection and fibrosis do not take place around a defect just because the donor site and pedicle of a flap have not been grafted.

The simplest, most direct methods are usually best for fixation of a foot to a cross leg flap, or an arm to a foot. This starts with the most comfortable position, as determined by practice, and with the simplest equipment. Adhesive, padding, and pillows with foam rubber over pressure points usually suffice and are the most comfortable. But plaster of paris with suitable struts and angle supports of light splint boards incorporated in the plaster may be needed to hold the knee up from the bed, or elsewhere to prevent unnecessary gravity, rotation and twisting. Padding should be copious with foam rubber, and suitable openings should be planned for inspection of the flap.

Detaching the flaps can be done in 14 to 21 days under local anesthesia, in stages if necessary; or, if there

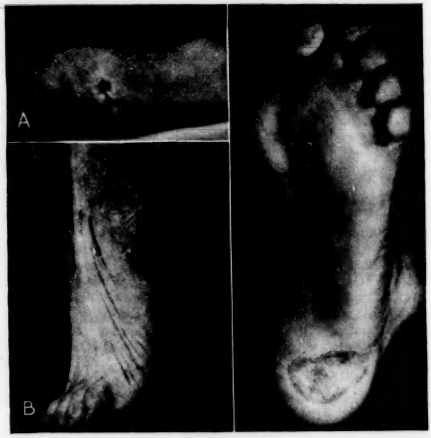


Fig. 4.—*A*, crippling wart with radiation lesion which was resected and repaired with a thick split graft in one operation. *B*, deformed position of foot, which had been assumed to find relief from excessive pain, with callus over instep from shoe pressure. *C*, foot after surgical repair.

is a heel or two sides of the foot to cover, a secondary flap delay may be indicated before detachment is done.

Repairs of donor sites are done with free split grafts, usually at a time slightly later than that of the detachment, since there are some noteworthy contractures and by waiting the grafted area may be smoother. For those flaps that have been "dressed" in grafts to start with, there is usually some further closure or grafting to do when the flap is detached.

Final adjustment of flap is usually done several days after detachment but can be done at the time of detachment if conditions are favorable.

A suitable bed is as necessary for a flap as for a graft since a flap may not attach itself over avascular areas, or will it over dead bone tendon or fascia. It may pick up circulation around the edges, only to have a chronic sinus persist as long as there is deeper trouble.

Once the plantar fascia is exposed and infected or necrotic it is usually a source of prolonged trouble, and resurfacing is contraindicated until all dead material is cut off or removed. The same is true of the tendons, and these two elements may cause prolonged morbidity in open wounds or, if they occur, under flaps. Free grafts, of course, will not grow over such areas.

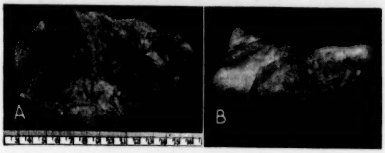


Fig. 5.—*A*, extensive wart and radiation lesion, closely approaching carcinoma. *B*, lesion after resection and repair with free split skin graft in one operation. Function is satisfactory for golf and normal activities.

Debridement in injured feet should be careful to eliminate dirt and dead tissue, but widespread cutting away of tissue should be done only after careful consideration, since there is so little extra or collapsible tissue in the foot.

Failing circulation in the extremities leads to questionable repairs of defects, and opens the possibility of repeat ucleration in the grafted site, so that the ultimate success of a repair in a circulatory dyscrasia or secondary impairment is uncertain, as it may be in leg ulcers. All of the processes involved in leg ulcers are not understood, but a basic point is that in some instances the circulation of the leg does not seem to have caught up with the requirements of the upright position.

Decubitus ulcers in persons with normal nerve supply usually respond to free grafting. Those in paraplegics may respond to the "take" of a graft but are subject to the same recurrent break down as any other area of anesthesia.

Plantar warts are the reason for most repairs of the sole. It is difficult for most patients and institutions and some medical echelons to understand how an insignificant thing like a wart can necessitate so much trouble and surgical work. An answer can be that the wart doesn't amount to anything, but its location does; and, to repeat, once the sole is open, disability exists until the

Fig. 6.—*A*, atomic radiation lesion in a laboratory worker. *B*, lesion after it was resected and repaired in one operation with a thick split graft.

sole is healed, free of trouble, and especially free of the wart. A painful wart might be likened to a cinder in the eye or a tack in a shoe, not much in themselves, but exceedingly painful and disabling.

Added to the wart itself may be a radiation lesion, and, to this, a malignant change, so that the problem is two fold: one, to get rid of the lesion, and, two, to give a satisfactory repair.

For repair of warts, scars and radiation lesions in the center of the foot, simple linear excision and closure may suffice; if not, a free thick split graft is used if sufficient pad is left to support it. Flaps from the side, or rotated, or from the dorsum may be needed, but the bearing surfaces over the first and fifth metatarsal heads and over the heel are not shifted to repair any defect. To do so would leave a scar over a bearing surface that might require a secondary repair even if a free graft were used to close the area.

Lesions over these three important bearing surfaces are not excised and closed by direct suture, because this would leave a disabling scar. Instead, there is usually a lateral shift from the midline, or a rotation flap closure from behind the toe, with repair of the donor site with a free graft.

Replacement of whole sole or large sections of it can be done with free thick split grafts if there is adequate padding left behind. If there is a question as to the adequacy of the padding, the graft can be used as a "dressing" and replaced later with a flap if necessary. Exposure of tendon, nerves, vessels, and, of course, of bone necessitates a thick pedicle flap, either cross leg or jump from the abdomen.

Gun shot wounds and others that avulse the pad usually require some variety of flap repair. Some of the wounds are of small surface area, but leave deep dense scars to the bone that need thick flap repairs in even these very small areas.

Radiation lesions are given special note because they are so prevalent and seem to be frequently missed in diagnosis. They are progressive lesions and are treated by removal, and grafting or flap repair.

Atomic radiation lesions will require the same principals of removal and repair. The fact that tissue which has been subject to radiation does not stand trauma and has poor ability to heal normally may make one hesitate to attempt surgical repairs in such areas, but in this discussion of resurfacing the foot it can be stated that the same principles apply to radiation lesions as to other lesions, with the qualification that there may be difficulty in healing the surgical repairs and there may be secondary deep necrosis, with amputation to be considered.[3]

Thermal injuries, including burns, freezing and immersion foot, are repaired according to the depth of loss with free grafts or flaps as outlined for other repairs.

## SUMMARY AND CONCLUSIONS

Relief from intensely painful lesions and from prolonged debilitation may be acquired by comparatively simple procedures. The essential steps are (1) the removal of the lesion, (2) the repair of the defect with a suitable covering, (3) the obtaining of permanent, complete healing at the site of the repair, and (4) proper care by the patient of the substituted tissue to protect it from trauma.

Results of repairs of lesions of the foot vary according to the original disability but usually allow the patient normal activity.

508 N. Grand Blvd.

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## ABSTRACT OF DISCUSSION

DR. J. WARREN WHITE, Honolulu, Hawaii: In our training, we have been warned against incisions on the sole or over other pressure-bearing surfaces. But many of us have known that we can get by without serious difficulties if we depart radically from such an axiom. Notorious along this line is the valuable longitudinal heel-splitting operation for osteomyelitis of the os calcis, in which the incision goes around the middle of the back of the heel, exposing the inside of the calcaneus in a fish mouth fashion, giving such wonderful exposure of that bone. Fortunately, now, in the days of the antibiotics, this operation is not as necessary as it was formerly, but it is well to know that it can be done with relative impunity. There is one type of graft that many of us have found most useful which Dr. Brown did not mention. I should appreciate his opinion on the use of the full-thickness graft, located in the classification of skin grafts between the time-consuming pedicle graft and the potentially keloid-producing split graft. Dr. Brown can do a split graft with a skill which a great many of us do not possess; therefore, I have been forced to use the full-thickness graft. In Honolulu we have excellently trained plastic surgeons to whom I can take the major problems, but in South Carolina, where I was for so many years, the problems involving indigents had to be solved locally by the orthopedists. We then used the time-consuming Ghormley technique in the avulsed heels, but, aside from that, we have used the full-thickness graft extensively. Most problems requiring its use, in the rural communities have been associated with burns in which healing has been characterized by cicatrization associated with the usual contractures. Hyperflexion or extension contractures of the toes are very common. Since going to Hawaii, I have done with much success many operations in which the hiatus produced by the opening of the transversely incised, contracted cicatrix, not infrequently extending the whole width of the foot, has been filled in by a full-thickness graft, the toes being held in the extreme overcorrected position during healing. The ankle, in which fixed dorsiflexion has resulted from a contracted scar is another area where a large, freely movable graft can be placed advantageously. Contrary to popular opinion, there is no limitation of size that restricts its use. Although I realize that Dr. Brown discounts the value of split skin grafting instruments, I should like to get his opinion on one recently devised by another Dr. Brown. It is manufactured in Indianapolis. This is the new automatic reciprocating mechanism, the dermatome, which I demonstrated at the Orthopedic Academy meeting two years ago in January. It has been most satisfactory. The trouble-producing vacuum part has been eliminated, and it now can be used as easily as one uses a lawnmower.

DR. JAMES BARRETT BROWN, St. Louis: The full-thickness graft is the best skin graft for certain areas, but it is not often necessary on the foot. Several things are important in this relation because the skin is so different in thickness over the various parts of the body. For instance, the foot has the thickest keratohyaline layer and about the thinnest derma; the back has the thickest derma and the thinnest epithelium. Therefore, full-thickness grafts from the back are not apt to grow, because the skin is too thick. If Dr. White's plan of using a full-thickness graft is followed, it will be best not to try to grow a full-thickness graft from the back. I had supposed Dr. White took most of his grafts from the abdomen, but he states that he has repeatedly taken them from the back, without the loss of the graft. There may be some difference between our interpretations of "thickness of skin," because if the heavy, full thickness of the skin on the back is used routinely, the graft is not likely to survive since it is too thick. This caution is added because Dr. White asked for an opinion on it. If one takes a thick split graft of about three-fourths thickness, or even one-half thickness, from high on the buttocks to put on an area similar to that on the foot shown by Dr. White, the operation can be done in about a tenth of the time it takes to do a full-thickness graft, and it may be a little better. We frequently use grafts on dirty areas, and, though we try to get them clean, they are sometimes hurried along. In such areas, we do not think the full-thickness grafts should be used, because there is a chance of loss. Split grafts are less apt to be lost, and, if they are, the loss is less important. Split grafts are rough for a time because, apparently, some of the glands get cut in two and may then secrete backward, leaving sebum collections that need evacuation; at least this is a way of explaining

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the roughness. The glands are kept empty to avoid infection and loss of surface, and, as these may be difficult to ascertain, it is best to keep close watch for several weeks. Dr. Brown, who developed the electro-dermatome, figured it out in a Japanese prison camp. He died after he came back to this country, and his wife is going on with the business. I am glad Dr. White mentioned the dermatome, as it seems to provide an excellent method of cutting a split graft. If one can use thick split grafts whenever possible, he is apt to have just as good results, if not better, than if full-thickness grafts were used routinely.

# SEGMENTAL RESECTION FOR PULMONARY DISEASES

*William S. Conklin, M.D.*
*and*
*Harry Westerberg, M.D., Portland, Ore.*

Pulmonary resections have been performed successfully for many years, but until 1933 the techniques remained crude and the operations extremely hazardous according to present standards. Staged operations, use of tourniquets and clamps and destruction of lung tissue with cautery all resulted in prolonged morbidity and a mortality horrifying to the surgeon of today.

In 1933 Rienhoff [1] first described the technique of individual isolation and closure of the bronchus and blood vessels at the hilus. This technique, now used in practically all pulmonary resections, has done more than anything else to reduce the operative complications and mortality of these procedures. In 1932 Graham and his colleagues [2] collected a series of 212 lobectomies in which the operative mortality was 34 per cent. By 1947 Kay and associates [3] were able to report 258 consecutive cases of lobectomy for bronchiectasis with only one death, and Jones [4] presented a series of 52 pneumonectomies for bronchogenic carcinoma with only two deaths, surgical mortalities of 0.4 per cent and 4 per cent respectively. Advances in anesthesia, improved preoperative and postoperative care, introduction of antibiotics and the increased experience of thoracic surgeons have also helped lower the operative mortality. It is now believed that the over-all operative mortality for lobectomy is less than 5 per cent and that that for pneumonectomy is well below 20 per cent.

Resection for pulmonary disease does not necessarily require that one or more lobes of the lung be removed in their entirety. Certain lesions can be resected locally by enucleation (fig. 4) or by removing a peripheral wedge-shaped portion of the lung (partial lobectomy). But the indications for such surgery are rare, since the lesions must be peripheral and localized. Such procedures are not suitable for most lesions requiring resection, even though much of the lobe is not involved, since the disease is likely to extend centrally toward the hilus.

Segmental resection, the most recent technical advance in pulmonary resection, resulted from the desire to conserve as much normal lung tissue as possible in cases of bronchiectasis with multilobar involvement. Specifically, the problem was what to do about bronchiectasis in the lingula of the upper lobe of the left lung, so commonly present when there is bronchiectasis in the lower lobe of the left lung. The alternatives formerly available were to resect only the lower lobe, in which case the patient still had bronchiectasis; to remove the entire lung, in which case a great deal of valuable, uninvolved lung would be sacrificed, or to remove the lower lobe and amputate the lingula distal to a clamp applied near the hilus. The latter was usually unsatisfactory due to failure to eradicate the pathological condition and because of the frequency of postoperative complications. The problem was solved by Churchill and Belsey,[5] who appreciated the segmental nature of pulmonary anatomy and demonstrated that the lingula could be dissected completely from the remainder of the upper lobe by dividing the lingular branches of the bronchus and pulmonary artery at their origin. Using the same technique, they also resected the basal segments of the lower lobe leaving the superior division.

It has long been evident that it is not entirely accurate to describe the right lung as having three separate lobes, the left lung two. The fissures which divide these conventionally described lobes one from the other are often incomplete, rudimentary or entirely absent. Particularly is this true of the transverse fissure between the upper and middle lobes of the right lung. Likewise, it is not uncommon to find a rudimentary or even a complete fissure separating one of the conventional lobes into divisions. Such fissures are found most often between the lingula and the remainder of the upper lobe of the left lung and between the superior portion of either lower lobe and its base. Nelson [6] described each lung as possessing four basic parts or "lobes": upper, middle, dorsal and lower. Further study of the anatomic subdivisions of the lung, based on the work of Goldman,[7] Foster-Carter,[8] Brock,[9] Jackson and Huber,[10] Boyden [11] and

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From the Department of Surgery, Division of Thoracic Surgery, University of Oregon Medical School, Hospitals and Clinics, and the Surgical Service of the Matson Memorial Hospital for Diseases of the Chest.

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others, has resulted in the recognition of 18 bronchopulmonary segments, 10 on the right and eight on the left. The nomenclature proposed by Jackson and Huber (see drawing, page 700, in Kent [12]) has received official recognition by the American Association for Thoracic Surgery and is now widely accepted.

Each bronchopulmonary segment has its own bronchial and vascular components. The segments are separated by a relatively avascular plane, as are "fused" lobes between which the interlobar fissure is incomplete or absent. Intersegmental veins are the only important structures generally found in this plane, and their importance will be referred to later. Subsegments, located more peripherally, with similar bronchovascular components and planes of separation, are also recognized, though their anatomic arrangements are more variable.

The importance of conserving as much functioning lung tissue as possible when performing resections must be emphasized. It is particularly essential when respiratory reserve is limited by disease or previous surgery, or when bilateral resection is contemplated. Nonresected portions of a lung also have tremendous space filling value even when they contribute little to respiratory function. They permit the early filling and obliteration of the pleural cavity, which reduces the incidence of postoperative empyema or reduces the extent of an empyema should one occur. Furthermore, the smaller the volume of lung removed the less overdistention and resultant loss of function that will follow in the portions of the same and the contralateral lungs that are conserved.

Since the original report of Churchill and Belsey in 1939 several authors, notably Clagett and Deterling,[13] Kent and Blades,[14] Blades,[15] Overholt and associates,[16] Ramsay,[17] and Chamberlain and Ryan,[18] have offered modifications and improvements in the technique of segmental resection. They have shown that the techniques of segmental resection are applicable to all bronchopulmonary segments, singly or in groups, and to subsegments; and also that indications for segmental resection exist in diseases other than bronchiectasis.

## INDICATIONS

Segmental pulmonary resection has been used most widely in cases of bronchiectasis. Since complications after segmental resection have tended to be more frequent than those after resection of an entire lobe with well developed fissures, it cannot be stated categorically that segmental resection is the procedure of choice in every instance in which it may appear applicable. When most of a lobe is involved in a disease process such as bronchiectasis it may be preferable to resect the entire lobe rather than to assume the added risk of trying to save an uninvolved segment that will contribute little to space filling and to function.

Application of segmental resection to bronchiectasis is dependent on preoperative bronchographic studies, filling all possible segments with iodized oil, and it is based on the assumption that adequate bronchography will determine the entire extent of the disease process. Studies reported by Moore and his colleagues [19] indicate that advanced pathological changes may be present in segments that show no evidence of bronchiectasis roentgenographically when they adjoin segments that do. Whether the less advanced changes may yet be reversible or are likely to be progressive has not been established. We have in one case, as has Kergin [20] in four, found bronchiectasis in the nonresected superior division of a lower lobe considered normal prior to resection of the basal segments. This required another operation for removal of the remaining superior segment. Further experience may show that segmental pulmonary resection should be applied with caution in cases of chronic suppurative disease, that it should be reserved (except insofar as the lingula is concerned) primarily for bilateral cases wherein maximum conservation of lung tissue is essential (fig. 5).

Segmental resection is applicable in types of chronic suppurative disease other than bronchiectasis, including some cases of lung abscess, infected lung cyst, empyema with bronchopleural fistula and extrapulmonary cyst with bronchocystic fistula and secondary suppuration.

In pulmonary tuberculosis segmental resection is finding wider applicability as the hazards are more readily avoided or controlled. It is impossible at present to itemize the indications for segmental resection in pulmonary tuberculosis. Indications for lobectomy and pneumonectomy have come to be fairly well accepted in the past few years. In general, those for segmental resection will include the same types of tuberculous pathological change, but selection of cases should be much more rigid until it may be shown that the risk is no greater, the results as good. Segmental resection, in the meantime, should receive special consideration in patients for whom maximum conservation of pulmonary function and volume is important or obligatory, e. g., those who have had previous collapse therapy or resection (figs. 4, 6 and 7) and others with distinctly reduced respiratory function. We have also performed segmental resections when localized caseous disease was found incidental to performing a pulmonary decortication for nonexpandable lung under a pneumothorax or tuberculous empyema. In seven of our series segmental resection was performed after previous thoracoplasty on the same side had failed to control the disease. When persistent upper lobe cavitation, after thoracoplasty, requires resection gross involvement may be found in the superior division of the lower lobe. We have sometimes considered it best to resect this segment along with the upper, and perhaps the middle, lobe, conserving the basal segments for space filling if they were not significantly involved (fig. 7).

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16. (*a*) Overholt, R. H., and Langer, L.: A New Technique for Pulmonary Segmental Resection, Surg., Gynec. & Obst. **84**: 257 (March) 1947. (*b*) Overholt, R. H.; Betts, R. H., and Woods, F. M.: Multiple Segmental Resection in the Treatment of Bronchiectasis, Dis. of Chest **13**: 583 (Nov.) 1947. (*c*) Overholt, R. H.; Woods, F. M., and Ramsay, B.: Segmental Pulmonary Resection, J. Thoracic Surg. **19**: 207 (Feb.) 1950.

17. Ramsay, B. H.: The Anatomical Guide to the Intersegmental Plane, Surgery **25**: 533 (April) 1949.

18. Chamberlain, J. M., and Ryan, T. C.: Segmental Resection in Pulmonary Diseases, J. Thoracic Surg. **19**: 199 (Feb.) 1950.

19. Moore, J. R.; Kobernick, S. D., and Wiglesworth, F. W.: Bronchiectasis: A Study of the Segmental Distribution of the Pathologic Lesions, Surg., Gynec. & Obst. **89**: 145 (Aug.) 1949.

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In no case of pulmonary tuberculosis can it be assumed that all unstable tuberculous lung lesions are being eradicated by pulmonary resection. The other lung also harbors disease that may not be clinically demonstrable. Resection, when elected, should be directed toward those lesions that have failed to respond to, or that are unlikely to be controlled by, less radical procedures and those in which control by other methods would involve very much greater and excessive permanent functional loss. There has been a tendency to resect whole lobes or lungs simply because the tuberculous lesions demonstrable by x-ray or exploration are not localized. However, it seems reasonable that lesions that require resection may be resected segmentally (or even locally in rare instances), and that remaining lesions may heal, as they were wont to do before excisional therapy came into wider use, with the aid of other available measures.

Streptomycin and paraaminosalicylate have helped greatly in making pulmonary resection the procedure of choice in many cases of pulmonary tuberculosis. We use them routinely for variable periods before and after surgery, and it is generally accepted that they have gone far toward eliminating the serious complications that occurred too often before they were available. Resection still should not be entertained as an optional type of treatment in pulmonary tuberculosis. But, it has been established as a type of therapy that in some cases offers the only prospect of cure.

Segmental resection has been used also in certain patients with mycotic lung disease (coccidioidomycosis).[21] It may be indicated in spontaneous pneumothorax,[22] localized emphysema or cystic disease with or without a fistula,[23] pulmonary arteriovenous aneurysm, broncholithiasis,[24] a foreign body in the bronchus and lung trauma. In bronchopulmonary neoplasia, whether benign or malignant, subtotal resection of a lobe or lung is rarely advisable. It may be considered for benign tumors, including hamartoma, and possibly for metastatic malignancy.

## TECHNICAL CONSIDERATIONS

The preoperative preparation, anesthesia and postoperative management of patients undergoing segmental resection are essentially the same as for patients undergoing lobectomy. They will not be discussed in detail here.

It would appear that Overholt and associates [16c] have devoted the most time, thought and effort to developing and expounding a standard technique for segmental pulmonary resection. The following points that they have emphasized deserve special mention: (1) The segmental artery, bronchus and vein (if present) should first be isolated at the hilus; (2) intersegmental veins should be identified and preserved; (3) application of clamps across lung tissue should be avoided, and (4) an attempt to cover the raw lung surfaces remaining after segmental resection by bringing together the edges of the visceral pleura is unnecessary and generally inadvisable, since it diminishes lung volume and function by constricting a portion of the lung. The technique that we are using, and which incorporates all the above points, will be described. It has not been altered appreciably since January 1946. Prior to that clamps were placed across lung tissue, after division of bronchus and artery, in five of the cases reported here. The reader is referred to figures 1, 2 and 3, which illustrate the anatomy and the technique employed in resection of the superior segment of the lower lobe of the left lung.

Dissection of the lung segment or segments to be removed is begun near the hilus after identifying the bronchus by palpation. When the segmental artery and bronchus have been exposed the latter is isolated and temporarily occluded while the lung is deflated. The anesthetist is then asked to increase the intratracheal pressure, and the portion of the lung supplied by the occluded bronchus will usually remain collapsed while the remainder of the lung becomes aereated. Thus the segment or segments supplied by the occluded bronchus can

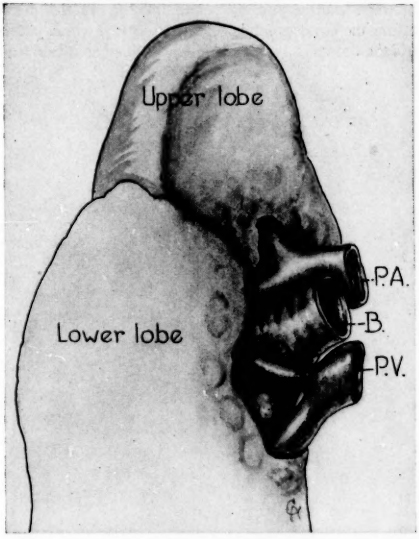


Fig. 1.—Drawing of the left lung showing the posterior view of the hilar anatomy.

be delineated with accuracy. Sometimes occlusion of a bronchus fails to prevent inflation of the lung beyond, since the anesthetic gases may enter it via interalveolar communications (pores of Kohn) with adjoining segments. However, this is not likely to occur when there is extensive pathological change present. When it does occur delineation may be possible by the reverse procedure, i. e., the lung distal to the occluded bronchus may remain aereated when adjoining segments are al-

21. Cotton, B. H., and Birsner, J. W.: Surgical Treatment in Pulmonary Coccidioidomycosis, J. Thoracic Surg. **20**: 429 (Sept.) 1950.

22. Brewer, L. A., III; Dolley, F. S., and Evans, B. H.: The Surgical Management of Chronic "Spontaneous" Pneumothorax: Report on Etiological Factors and Surgical Treatment Employed in 15 Cases, J. Thoracic Surg. **19**: 167 (Feb.) 1950.

23. Dugan, D. J., and Samson, P. C.: The Surgical Treatment of Giant Emphysematous Blebs and Pulmonary Tension Cysts, J. Thoracic Surg. **20**: 729 (Nov.) 1950.

24. Schmidt, H. W.; Clagett, O. T., and McDonald, J. R.: Broncholithiasis, J. Thoracic Surg. **19**: 226 (Feb.) 1950.

lowed to collapse. These maneuvers, when successful, help to determine whether or not the part of the lung supplied by the occluded bronchus contains all the disease process that is to be extirpated. Delineation of the segment to be resected also permits incision of the visceral pleura along the borders so delineated before dissection in the intersegmental plane is completed. It is not necessary or desirable to do this as a rule, but in difficult situations it may facilitate the dissection. In any case, localization and dissection in the intersegmental plane is more readily accomplished if the limits of the segment can first be outlined.

It is advisable to occlude the bronchus as early as possible in order to entrap and prevent the spillage of infected secretions. The bronchus can then be divided between clamps and by gentle traction on the distal clamp the corresponding segmental artery, which parallels the bronchus, will be readily identified as it is placed

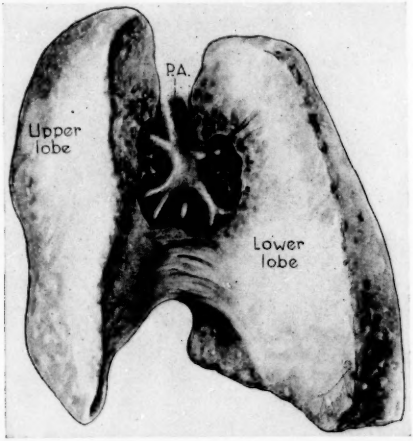


Fig. 2.—Drawing of the left lung showing the hilar anatomy with a dissection over the pulmonary artery at the base of the interlobar fissure. The branch of the pulmonary artery to the superior segment of the lower lobe of the left lung has been ligated.

on stretch. To improve exposure of the bronchus it is sometimes helpful to ligate and divide the segmental branch of the pulmonary artery first. As traction is maintained on the bronchus the intersegmental plane is developed by blunt finger dissection. When the intersegmental vein can be identified near the hilus it serves as an excellent guide to the plane of dissection. Segmental veins are ligated and divided as they are encountered. Intersegmental veins receive tributaries from the adjoining segment as well as from the segment to be removed. In order to avoid postoperative engorgement of nonresected adjoining segments, the intersegmental veins should be carefully preserved, dividing only tributaries from the segment that is removed.

As blunt dissection in the intersegmental plane is extended to the visceral pleura, the latter is divided as it is reached. If during dissection it is discovered that the disease process extends into an adjoining segment, it may prove advisable to resect the adjoining segment or a subsegment at the same time and according to the same technique. Occasionally a small extension into the periphery of an adjoining segment requires only local excision.

After segmental resection there generally will be small air leaks from the raw surface of the remainder of the lobe, though sometimes there are none at all. Most of these small leaks seal spontaneously before or soon after the operation is completed. If positive pressure anesthesia demonstrates vigorous bubbling from one or more sites on the raw surface of the expanding lung, such leaks should be controlled by clamping and ligation or by application of small mattress sutures of fine silk. Persistent bleeding points from torn tributaries of the intersegmental vein are likewise clamped with fine forceps and ligated.

Finally, the stump of the segmental bronchus is closed after ascertaining that it has been divided as close to its origin as possible so as to avoid leaving a blind bronchial pouch. For closure of a bronchial stump we prefer to use interrupted sutures of 0.017 cm. (0.007 in.) tantalum wire on atraumatic needles, believing that this material has the following advantages: (1) It is nonabsorbable and has tensile strength high in proportion to its fine size, and is thus likely to remain in place while healing occurs; (2) the nonreactive nature of the material and the small caliber of the needle perforations reduce local inflammatory reaction to a minimum; (3) cotton or silk sutures, by capillary attraction, may act like wicks, carrying infected secretions from the lumen of the bronchus deep into the tissues, increasing the danger of inflammation, ulceration and rupture of the stump, and (4) the tantalum sutures are clearly visualized on postoperative roentgenograms, thus making it possible to demonstrate whether or not the suture line remains intact. The tantalum wire sutures are placed before removing the clamp from the stump of the bronchus. While an assistant supports them to maintain closure of the stump, the sutures are individually tied. With one or more of these same sutures, or with fine atraumatic chromic surgical gut sutures, the stump is then buried by sewing onto it a flap of pleura, lymph nodes or other available tissue.

When resecting part of a lung that is collapsed, or which previously has been collapsed, by an artificial pneumothorax, pleural effusion or empyema, a constricting fibrinous membrane is likely to be found over the surface of the lung and, not infrequently, the lung surface is found to be deeply infolded. In such circumstances it is important to decorticate thoroughly all portions of the lung that are to be preserved. By separating adhesions between opposing surfaces of visceral pleura the infolded portion of the lung can be released and considerable lung volume regained.

Generally, in segmental resections the nonresected portions of the lung will now have sufficient volume to permit postoperative filling and obliteration of the pleural cavity without excessive compensatory changes having to occur. Occasionally, however, it may seem advisable to decrease the size of the thorax by performing a partial thoracoplasty. Thoracoplasty in conjunction with resec-

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tion is most frequently indicated in patients with pulmonary tuberculosis and when the volume of the lung has been considerably reduced by disease and by resection, especially when all or part of an upper lobe has been resected. Thoracoplasties generally have been performed two or more weeks after the resection in these cases. If a thoracoplasty appears advisable we prefer to perform it immediately after the resection, and the following modification in our operative approach has proved advantageous.

Usually we perform a thoracotomy by resecting a long segment of the fifth, sixth, or seventh rib, incising through its periosteal bed. When a thoracoplasty is planned to follow a resection, we first resect only a short posterior segment of the fourth rib and carry the thoracotomy incision from this rib bed anteriorly along the fourth intercostal space. If additional rib resection is advisable to improve exposure the posterior one third of the third rib is removed. On completion of the lung resection all or most of the first and second ribs are easily resected; and the extent of the thoracoplasty can be adjusted to the needs of the case without significantly prolonging the operation. But, if the operative procedure has been long or if the patient's condition is not entirely satisfactory the rest of the thoracoplasty is deferred and completed at a later date. We do not consider it wise to include more than five ribs in a thoracoplasty performed immediately after resection. When a more extensive thoracoplasty is required additional rib segments can be resected, generally under local anesthesia, two or three weeks later. We have performed a five rib thoracoplasty immediately after segmental resection in one case and four rib thoracoplasties, according to this technique, in three. In one of the latter segments of two additional ribs were resected later. In a larger series of patients we have performed thoracoplasty immediately after lobectomy or pneumonectomy, and in only one case has the thoracoplasty appeared to have had a deleterious effect on the patient's postoperative course. In this instance an eight rib throacoplasty was performed immediately after a pneumonectomy, and temporary respiratory embarrassment resulted from excessive paradoxical movement of the chest wall.

Before completion of the operation it sometimes appears desirable to prevent postoperative dislocation and torsion of remaining lung segments by placing a few interrupted surgical gut sutures across anatomic or artificially developed fissures in order that the normal relationships between lung segments will be maintained. It is our practice then to irrigate and cleanse the pleural cavity, to place drainage tubes (if they are to be used) and to introduce antibiotic solutions before the chest wall is closed. Before closure it is also important that the anesthetist expand the remaining portion of the lung in order to be sure that all segments become well aereated. During closure lung expansion is maintained by the anesthetist and by means of suction applied to an intercostal drainage tube or to a catheter introduced through the wound and withdrawn shortly before closure is complete.

Contrary to accepted principles, we have not used drainage tubes routinely in cases of subtotal pneumonectomy. It has been our impression that, after segmental resection, patients in whom some air, blood and exudate are allowed to accumulate around a partially collapsed remaining portion of the lung are less likely to have persistent air leaks and fistula formation. Deposition of fibrin over the bronchial stumps and raw surfaces of a partially collapsed lung may promote early sealing and decrease the danger of fistulas. In some of the patients managed in this way no thoracenteses were required, because there was no significant accumulation of air or fluid in the pleural cavity. In most patients, however, one or more thoracenteses have been performed, beginning on the first or second postoperative day. Optimum lung expansion appears to have been obtained as regularly in these patients as in those in whom pleural drainage has been instituted at the time of operation. In most of our

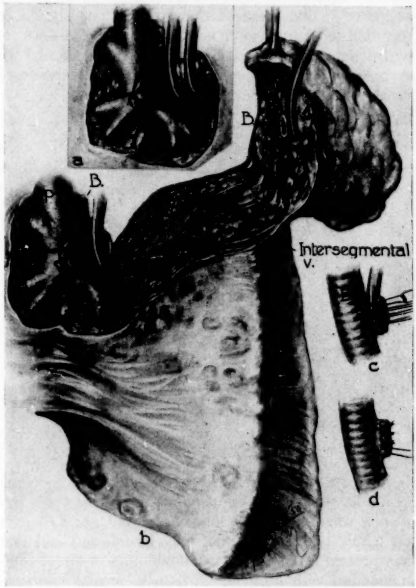


Fig. 3.—Segmental resection of the superior segment of the lower lobe of the left lung. *a*, the segmental artery divided between ligatures, the segmental bronchus doubly clamped; *b*, segmental bronchus artery and vein divided, intersegmental dissection nearly completed, *c*, and *d*, closure of the bronchial stump with interrupted tantalum wire sutures.

cases we have used one or two intercostal drainage tubes, connecting these to water seal bottles. The tubes are not removed until all leakage of air has ceased and drainage has become serous in character and negligible in quantity (usually within 48 to 72 hours). Motor suction has seldom been applied to these tubes except at the time of their removal. We have omitted drainage tubes in 10 of 50 segmental resections, and in none of these has postoperative bronchopleural fistula or empyema developed. It is true, however, that tubes have been omitted only when very little air leakage, bleeding and exudation were anticipated, which no doubt contributed to the favorable results in this small group.

### CLINICAL MATERIAL

We have performed 50 segmental resections, either alone or in conjunction with lobectomy, in 48 patients since 1944. The indication for surgery was pulmonary tuberculosis in 25, bronchiectasis in 17, chronic lung abscess in two and, in one each, the following: teratodermoid cyst with bronchocystic communication and secondary suppuration, bronchopulmonary suppuration secondary to a foreign body (tooth) in a bronchus, ruptured emphysematous bleb with persistent fistula and pulmonary arteriovenous aneurysm. In two of the patients with bronchiectasis bilateral segmental resections were performed. We have used the term "segmental resection" to include removal of the lingula and of a superior segment of the lower lobe, although it has been suggested [25] that these portions of the lung should be regarded as individual lobes. Actually, the absence of well defined fissures makes the technical aspects of the surgery and the hazards identical with those encountered when resecting other bronchopulmonary segments.

### COMPLICATIONS

Reluctance to perform segmental resection has been engendered by the fact that postoperative complications, especially bronchopleural fistula and empyema, occur more frequently than after lobar resections. It is almost inevitable that these complications will occur more frequently when a part of a lobe is removed, since there is left a raw lung surface that may be infected and that may present leakage from small openings in direct communication with bronchi. Obviously, greater contamination of the operative field is to be expected. Overholt and his colleagues [16] have shown that the incidence of these complications after segmental resection has been markedly reduced as the techniques have been improved and standardized. Furthermore, these complications generally respond quite promptly to proper management. While the immediate postoperative morbidity tends to be increased, this disadvantage appears to be offset by preservation of maximum lung volume and function and by the fact that segmental resection may offer some prospect of eradicating the disease in certain patients (particularly those with bilateral bronchiectasis) who otherwise would not be candidates for surgical cure, because they could not tolerate resection of all of each lobe that is involved. Other complications which may or may not occur more frequently after segmental resection than after lobectomy include engorgement of adjoining pulmonary segments (particularly when the intersegmental vein is interrupted [26]), incomplete or delayed reexpansion of the remainder of the lung, homolateral or contralateral spread of infection (particularly tuberculous) and atelectasis. Obstructive atelectasis, as pointed out by Churchill,[5] may be due to inflammatory edema in a bronchus adjoining one that has been amputated. Avoiding trauma and the use of tantalum wire sutures may reduce the incidence of this complication. Complications encountered in our series of 50 segmental resections are summarized in the table.

*Summary of Segmental Pulmonary Resections*

| | Number of Cases | Number of Operations | Complications: Bronchopleural Fistula with Empyema | Complications: Miscellaneous | Death |
|---|---|---|---|---|---|
| Pulmonary tuberculosis | 25 | 25 | 2 | 1 contralateral spread | 1 |
| Bronchiectasis | 17 | 19 | 3 | 1 transient pulmonary insufficiency<br>1 lung abscess<br>1 atelectasis | 0 |
| Miscellaneous | 6 | 6 | 0 | 0 | |
| Total | 48 | 50 | 5 | 4 | 1 |

### CHRONIC SUPPURATIVE DISEASE

We have performed 23 segmental resections in 21 patients with chronic suppurative disease. In 19 of these operations (17 patients) the indication was bronchiectasis alone; in two the indication was chronic lung abscess with associated bronchiectasis; in one, secondarily infected teratodermoid cyst with a bronchocystic communication and associated chronic suppuration and bronchiectasis in the basal segments of the lower lobe of the right lung, and in another a tooth lodged in the posterior basal branch of the right lower lobe bronchus with secondary suppuration distal to the obstruction.

The 21 patients included 15 women and six men, and the age range was from 10 to 46 years. The 23 operations involved resection of 37 segments or groups of segments and one subsegment. Lobectomy was performed simultaneously in 10, bilobectomy in one. Entire lobes resected included the following: upper lobe of the right lung, two; middle lobe of the right lung, five; lower lobe of the right lung, one, and lower lobe of the left lung, four. While 12 of these patients had bilateral bronchiectasis, contralateral lobectomy or segmental resection has been performed, to date, in only three.

Bronchopleural fistula and empyema occurred in three patients in this group, each of whom had bilateral bronchiectasis. In two cases this complication followed a second operation, contralateral resection having been previously performed. Two of the three empyemas responded promptly to open drainage, with obliteration of the empyema space and closure of the fistula. The third is our most recent case, and open drainage is still being maintained. Atelectasis complicated the convalescence of one patient who would not, or could not, expel secretions voluntarily after surgery. This responded to bronchoscopic aspiration performed on three occasions. A small abscess (loculated empyema?) developed in the region of the remaining superior segment of the lower lobe of the left lung after resection of its basal segments along with the lingula. The lesion responded to antibiotic therapy alone.

All the patients with bronchiectasis herein reported are considered to have improved since their surgery, though at least nine still have bronchiectasis on the contralateral side. It is possible that patients with bronchiectasis who have had segmental resections are less likely to be relieved completely of their symptoms than those who have been considered good candidates for cure by lobectomy, particularly unilateral lobectomy. However, patients with severe bronchiectasis can be greatly improved, even if they cannot be cured, by elimi-

25. Nelson,[8] Chamberlain and Ryan.[15]
26. Chamberlain and Ryan.[15] Swan, H., and Mulligan, R. M.: Experimental Study of Ligation of Pulmonary Veins in Dog, J. Thoracic Surg. **17**: 44 (Feb.) 1948.

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nation of the more severely involved bronchopulmonary segments. Segmental resection makes rehabilitation available to many patients who formerly were not considered candidates for surgery because of the extent and multilobar distribution of their disease.

### PULMONARY TUBERCULOSIS

Twenty-five segmental resections were performed on the same number of patients with pulmonary tuberculosis. There were 13 men and 12 women, their ages ranging from 15 to 58 years. Only once were separate segments resected at the same operation (as contrasted with 13 times in the bronchiectasis group). In one patient a large peripheral tuberculoma in the upper lobe of the right lung was enucleated after resection of the superior segment of the lower lobe of the right lung (fig. 4). While in bronchiectasis the lingula of the upper lobe of the left lung was the segment most often resected (13 times), in tuberculosis a superior segment of a lower lobe most often contained the offending lesion (on the right in 12 instances and on the left in six). A previous resection of the contralateral lower lobe had been performed in one. Homolateral lobectomy was performed at the time of segmental resection in eight, bilobectomy

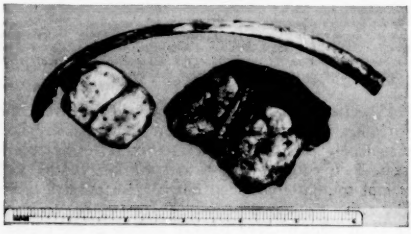

Fig. 4.—Surgical specimens illustrating minimal sacrifice of lung tissue by segmental resection and local excision in E.L., 34 year old diabetic woman with bilateral far advanced pulmonary tuberculosis who failed to have conversion of sputum after bilateral pneumothorax and who was shown to have persistent cavitation in the superior segment of the lower lobe of the right lung by laminagrams. After resection of the superior segment of the lower lobe containing a tuberculoma with central cavitation and enucleation of a subpleural tuberculoma of the upper lobe of the right lung, sputum became negative immediately. Specimen on left shows the incised enucleated tuberculoma of the upper lobe of the right lung; that on the right, the incised superior segment of the lower lobe of the right lung.

in three. Lobes resected included the upper lobe of the right lung in three, the upper and middle lobes of the right lung in three, the upper lobe of the left lung in four and the lower lobe of the left lung in one.

Bronchopleural fistula and empyema occurred in two patients after segmental resection for pulmonary tuberculosis. The first of these was a diabetic Negro with cavitation of the lower lobe of the left lung operated on in 1944 before streptomycin was available. Unsuspected tuberculous consolidation of the lingula was found; and this segment was resected, using clamps. A small empyema with a fistula developed, but the patient improved sufficiently to be discharged from the hospital with a negative sputum. However, he died 23 months later with progressive tuberculous disease. This is the only late death in the series. The second patient in whom a bronchopleural fistula and empyema developed had had a lingulectomy to remove a tension cavity that could not be controlled with artificial pneumothorax. Segmental resection was performed because there had been multiple cavities in the lower lobe of the right lung, and it was thought that contralateral resection might eventually be considered. The lingular cavity was extremely adherent to the bronchus passing to the remaining portion of the upper lobe of the left lung. The cavity was ruptured during the dissection, with gross contamination of the pleural cavity. Closed intercostal suction drainage was instituted with early improvement, and sputum conversion occurred; but, a contralateral upper lobe spread appeared after instillation of streptokinase into the small empyema space. While this recent patient is showing steady improvement with continued streptomycin and paraaminosalicylate therapy, her ultimate prognosis cannot be considered good.

Another complication encountered in the tuberculosis cases was severe, though temporary, pulmonary in-

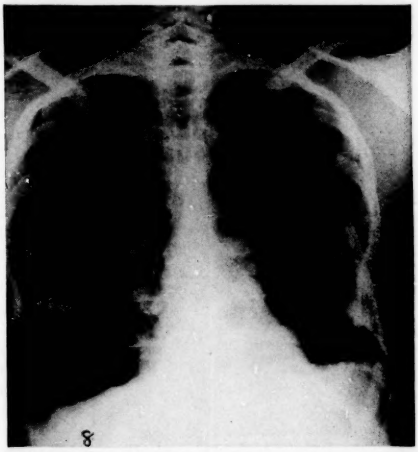

Fig. 5.—K. H., 16 year old boy with severe bilateral bronchiectasis. Chest film following resection of anterior segment of upper lobe of the right lung, the middle lobe of the right lung and the basal segments of the lower lobe of the right lung and later resection of the lingula of the upper lobe of the left lung and the basal segments of the lower lobe of the left lung. Small empyema with bronchopleural fistula following second operation responded promptly to tube drainage. Note tantalum wire sutures.

sufficiency. A 58 year old man had a constricting fibrinous membrane, secondary to a previous therapeutic pneumothorax, over the right lung. Decortication was first performed in the hope that pulmonary function might be improved prior to resection of a "tuberculoma" at the apex of the left lung. Improved function was not evidenced by bronchospirometric studies before and after decortication, though radiographically and subjectively the results were good. We proceeded with segmental resection of the apical-posterior segment of the upper lobe of the left lung, which contained a hard tuberculous mass with central caseation necrosis. For several days after surgery the patient appeared critical because of marked dyspnea. He improved gradually and was eventually discharged from the hospital in excellent

condition, able to tolerate moderate exertion without discomfort. His sputum was converted immediately after surgery and has remained so.

The only operative death in the 50 segmental resections we have performed occurred after resection of the superior division of a lower lobe of the left lung in a patient with pulmonary tuberculosis. This was an early case, in which clamps were placed across lung tissue to complete the resection. Death was ascribed at autopsy to pulmonary atelectasis, and it is thought that death might have been averted had more prompt and active therapy been administered by the staff. It is worthy of note that two of the four tuberculous patients who had postoperative complications were among the three early patients in whom clamps were used.

Chamberlain [27] has recently reported 75 segmental resections for pulmonary tuberculosis with three deaths and early sputum conversion in 87 per cent. In many of

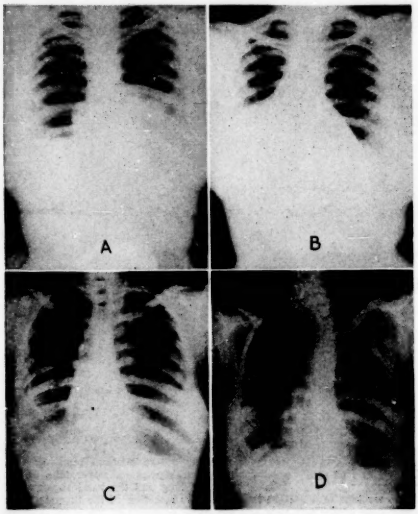


Fig. 6.—L. C., 28 year old woman with artificial pneumothorax and pleural effusion on the right developed tension cavity in upper lobe of the left lung. *A*, soon after induction of left pneumothorax; *B*, extreme collapse of both lungs with pneumothorax failed to convert sputum; *C*, pleural exudate on both sides, neither lung could be reexpanded, and *D*, following resection of apical posterior segment of upper lobe of the left lung, decortication of remainder of lung and four rib thoracoplasty performed at one operation. Right pneumothorax maintained. The patient's sputum converted immediately after surgery, but a recent specimen (about one year after surgery) was reported positive. A similar operative procedure may be performed on the right.

our patients segmental resection was performed, though the risk appeared great, because there seemed to be no alternative prospect of cure. Nevertheless, our only operative death occurred four and one half years ago, when the technique was admittedly poor, and only one of the living patients has not been definitely benefitted as a result of the surgery. In one case we resected only the superior division of the lower lobe of the right lung, because it contained a thick walled cavity, and because the upper lobe of the right lung was essentially free of disease, while the left lung showed considerable involvement. This patient had intermittently positive sputum for five months after his surgery (performed in

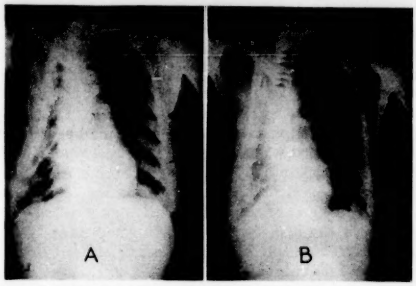


Fig. 7.—T. M., 21 year old woman with far advanced pulmonary tuberculosis whose early response to a nine rib thoracoplasty appeared good, with sputum conversion. *A*, cavity has appeared, opposite third anterior interspace, in superior division of lower lobe of the right lung; cavernostomy was performed and eventually plastic closure of a persistent bronchocutaneous fistula; sputum became intermittently positive and *B*, after resection of the upper lobe of the right lung, middle lobe of the right lung and superior division of lower lobe of the right lung. Sputum now remains negative. The small amount of lung tissue remaining on the right has been sufficient to fill the residual pleural space and prevent mediastinal displacement and over distention of the contralateral lung.

1945), after which his sputum remained negative. Only two other patients failed to show sputum conversion immediately after surgery. These are relatively recent cases. Two patients (fig. 6 and the late death) had prompt sputum conversion but became positive again after rather prolonged periods. Three (13 per cent) of the living patients have positive sputum at the present time, the remainder were negative at last report.

### MISCELLANEOUS

We have performed six segmental resections on patients whose primary disease was other than bronchiectasis or tuberculosis, and in four of these, mentioned

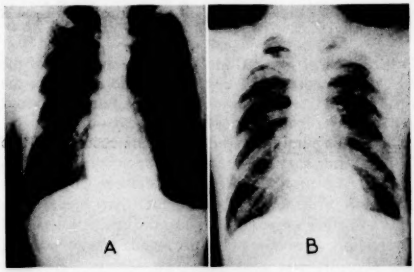


Fig. 8.—E. A., 58 year old man with persistent pneumothorax after rupture of emphysematous bleb (see text). *A*, chest X-ray before surgery, and *B*, after resection of apical-posterior segment of upper lobe of the left lung. There are large emphysematous blebs remaining in the upper lobe of the right lung, but patient is asymptomatic.

previously, suppurative disease provided the indication. One patient with a ruptured emphysematous bleb and persistent tension pneumothorax was found to have a

27. Chamberlain, J. M., and Klopstock, R.: Further Experiences with Segmental Resection in Tuberculosis, J. Thoracic Surg. **20**: 843 (Dec.) 1950.

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large (1 cm.) tear in the bleb at thoracotomy. Resection of the apical-posterior segment of the upper lobe of the left lung, containing multiple blebs, gave an excellent result (fig. 8). The other segmental resection was for pulmonary arteriovenous aneurysm in the superior division of the lower lobe of the right lung. After resection, cyanosis, polycythemia and clubbing gradually disappeared. No complications occurred in the patients on whom we performed segmental resections in this miscellaneous group.

SUMMARY

The lungs are comprised of 18 bronchovascular units, or segments. These segments, where they do not border on fissures, are separated by planes that generally contain no important structures other than intersegmental veins. Dissection along these planes can be accomplished readily, and segments can be removed, singly or in groups, after division of the segmental bronchus, artery and vein (if present) at their origin. When performing segmental resections it is important to preserve the intersegmental veins with the nonresected adjoining segments.

Segmental resection is applicable in some types of bronchopulmonary disease wherein removal of the involved portions of the lung offers the only means for cure or for maximum palliation. Segmental resection is recommended for patients with such extensive involvement that lobar resections would result in excessive reduction in respiratory function. Nonresected portions of a lung have space filling as well as functional value.

Indicated most frequently in bronchiectasis and tuberculosis, segmental resections are also applicable in some cases of lung abscess, mycotic disease, cystic disease, localized emphysema with or without ruptured bleb, bronchopleural or bronchocystic fistula, broncholithiasis, trauma and arteriovenous aneurysm. In bronchopulmonary neoplasia subtotal resection of a lobe or lung is rarely advisable.

Fifty operations are reported in which segmental resection was performed, either alone or in conjunction with lobectomy.

**Specialization.**—The main justification for specialisation among clinicians is the necessity for mastering difficult techniques. The various branches of surgery are all legitimate specialties for therapeutic reasons; and ophthalmology, otorhinolaryngology, and perhaps a few others are also legitimate for diagnostic reasons. The same considerations apply to anesthetics and radiotherapy. But in the field of medicine as opposed to surgery, and also in the important part of surgery which precedes the actual operation, there is little to be said in favour of specialisation, and much to be said against it. The modern tendency to subdivide physicians into cardiologists, gastroenterologists, phthisiologists, diabeticians, rheumatologists, kidney specialists, and the rest is regrettable. Even in so far as certain medical specialties, such as pediatrics and neurology, are justifiable, those who practise them would usually be better if they were also general physicians.

The value of the physician is derived far more from what may be called his general qualities than from his special knowledge. A sound knowledge of the etiology, pathology, and natural history of the commoner disease is a necessary attribute of any competent clinician. But such qualities as good judgment, the ability to see the patient as a whole, the ability to see all aspects of a problem in the right perspective, and the ability to weigh up evidence are far more important than detailed knowledge of some rare syndrome, or even the possession of an excellent memory and a profound desire for learning.—J. W. Todd, M.D., Specialisation, *The Lancet*, Feb. 24, 1951.

# CLINICAL NOTES

## HEMOLYTIC STREPTOCOCCIC SORE THROAT

### CORTISONE IN THE TREATMENT OF THE POSTSTREPTOCOCCIC STATE

*Alexander A. Doerner, M.D.,*
*Charles F. Naegele, M.D.*
*and*
*Frederic D. Regan, M.D., New York*

Patients suffering from hemolytic streptococcic infection of the respiratory tract frequently develop a variety of disorders as a complication of their illness. Skin manifestations, polyarthritis, involvement of the heart and its structures, persistent fever, general toxicity, and nephritis may develop in from three to 30 days after the respiratory infection begins.

It has been noted [1a] that in approximately 20% of such respiratory tract illnesses, a disorder supervened which could not be explained on the basis of increased reaction of the primary inflammatory site or as a result of invasion of remote tissues by the hemolytic Streptococcus. These complicating nonsuppurative sequelae of hemolytic Streptococcus disease have been referred to as the poststreptococcic state. It has been suggested that this state occurs not as the result of the primary etiological agent per se, but rather as a more complex mechanism by which the patient's tissues have been sensitized to some fraction or product of the hemolytic Streptococcus, probably as a result of previous exposure to this organism.

It is the purpose of this paper to present a case demonstrating the classical features of the poststreptococcic state as described by previous investigators,[1] and to emphasize the efficacy of cortisone in the treatment of this condition.

#### REPORT OF CASE

*History.*—L. S., a 17 year old white woman of Latvian extraction, was admitted to the United States Marine Hospital, Staten Island, N. Y., April 24, 1950, with a history of sudden onset of a sore throat, chills and fever six days previously. A diagnosis of acute tonsillitis had been made by her physician, and penicillin therapy initiated. Because of lack of clinical response and continued fever to 104 F., she was referred for hospitalization. The past history was noncontributory.

*Physical Examination.*—On admission, examination revealed an acutely ill, toxic young woman, with a marked erythematous bimalar flush. The temperature was 104 F., pulse 126 per minute, respirations 24 per minute. The posterior pharyngeal wall and tonsillar fossae were diffusely injected, and there were sev-

From the Department of Medicine, United States Marine Hospital, Staten Island, N. Y.; Chief of Medicine (Dr. Doerner); Deputy Chief of Medicine (Dr. Naegele); Senior Medical Resident (Dr. Regan).

Cortisone was made available by Merck & Co., Inc., Rahway, N. J., Dr. James Carlisle, Medical Director. This was done through a special grant from the United States Public Health Service, Federal Security Agency.

1. (*a*) Rantz, L. A.; Boisvert, P. J., and Spink, W. W.: Hemolytic Streptococcic Sore Throat: The Poststreptococcic State, Arch. Int. Med. **79**:401 (April) 1947. (*b*) Mallory, G. K., and Keefer, C. F.: Tissue Reactions in Fatal Cases of Streptococcic Haemolyticus Infection, Arch. Path. **32**:334 (Sept.) 1941. (*c*) Keefer, C. F.: The Late Nonsuppurative Disorders of Hemolytic Streptococcal Diseases, Texas State J. Med. **35**:457, 1939. (*d*) Jensen, C. R.: Nonsuppurative Poststreptococcic (Rheumatic) Pneumonitis: Pathological Anatomy and Clinical Differentiation From Primary Atypical Pneumonia, Arch. Int. Med. **77**:237 (March) 1946. (*e*) Robinson, P.: Hemolytic Streptococcic Infections: Their Complications and Sequels with Special Reference to Penicillin Treatment, Brit. M. J. **2**:213, 1945.

eral small ulcerations on the undersurface of the tongue and on the buccal mucosa. There was a scarlatiniform rash involving the trunk, noted especially on the extremities and back. There was a bilateral, nontender, cervical adenopathy. The remainder of the examination disclosed no pertinent abnormal findings.

*Laboratory Data.*—Examination of the blood showed 3,400,000 red cells, 10.5 gm. of hemoglobin per 100 cc., 27,100 white cells, with 39% band forms, 49% neutrophiles, 10% lymphocytes and 2% eosinophiles. Platelet count, bleeding time and coagulation time were normal. The sedimentation rate (Cutler method) was 25 mm. in one hour. Urinalysis was negative. Agglutination reactions for typhoid, paratyphoid, Brucella, and Bacillus proteus $X_{19}$ form O were negative in all dilutions, and remained so throughout hospitalization. The heterophile agglutination tests were repeatedly negative. The antistreptolysin titer was initially positive in a dilution of 1:40, rising to 1:450 on the 25th hospital day. Stool examinations were negative for ova, parasites and pathogenic bacteria. Initial blood culture revealed colonies of gram-positive cocci, which could not be subcultured. Subsequent blood cultures, repeated at frequent intervals, were consistently negative. Roentgenograms of the chest were normal. The interpretation of the electrocardiogram was within normal limits. Smears and cultures of the throat demonstrated the presence of beta hemolytic streptococci. All subsequent throat cultures were negative.

The clinical impression was that the patient had a hemolytic streptococcic sore throat, resistant to previous penicillin therapy.

*Hospital Course.*—On the first hospital day, the oral administration of aureomycin hydrochloride was begun, with a total daily dosage of 4 gm. The patient continued to be febrile and markedly toxic. Because of possible bacteremia, penicillin therapy was also instituted, 1 million units being injected intramuscularly every three hours. Subsequently, the results of sensitivity studies were returned, showing the hemolytic Streptococcus initially isolated to be completely inhibited by 5 units of penicillin per milliliter, 5 γ of aureomycin per milliliter, 5 γ of chloramphenicol (chloromycetin®) per milliliter, 5 γ of streptomycin per milliliter and 2,500 γ of sulfadiazine per milliliter.

Except for the development of an anemia believed to be due to her general toxemia, the patient's course and laboratory findings continued unchanged. On the eighth hospital day, a grade II apical systolic murmur was heard for the first time. Early desquamation of the skin of the hands and feet was also noted to be present.

Aureomycin was discontinued, and the administration of acetylsalicylic acid begun, 20 grains (1.3 gm.) every four hours. Four days later, streptomycin was added to the patient's therapeutic regimen, 2 gm. being given daily, intramuscularly, in divided doses.

On the 14th hospital day, a pericardial friction rub was heard, and the apical systolic murmur appeared to be more marked. The patient also complained at that time of severe pain in her left knee and right ankle. Slight erythema and moderate effusion of the left knee was present. These manifestations subsided within four days.

On the 20th hospital day, penicillin and streptomycin were discontinued, and chloramphenicol was begun, in a total daily dosage of 5 gm. Three days later, signs of a left lower lobe pneumonia with pleural effusion were detected, and a diagnostic tap obtained straw-colored fluid, which proved to be sterile transudate.

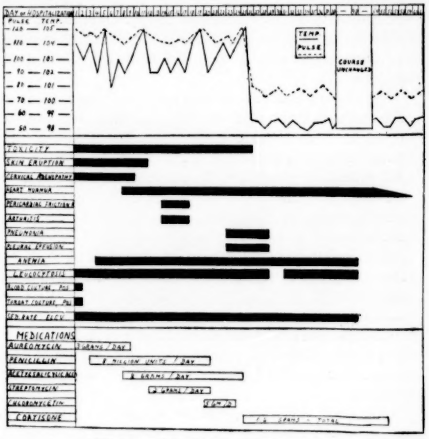
Intensive supportive therapy was maintained, including frequent blood transfusions, electrolyte replacement, parenteral vitamins and general symptomatic measures. Despite this, the patient's course continued downhill. On the 25th hospital day, eosinophile counts showed a significant increase following the epinephrine test.[2] The following day cortisone therapy was initiated.

2. McGavack, T. H.: Diagnostic Procedures in Cases of Adrenocortical Hypofunction, New York Med. **6**:16, 1950.

3. Massell, B. F.; Warren, J. E., and Sturgis, G. P.: Observations on Effects of ACTH in Patients with Rheumatic Fever and Rheumatic Carditis, Proc. First Clin. ACTH Conf., Philadelphia, The Blakiston Company, 1950, p. 405.

Four hours after the administration of 100 mg. of cortisone, an eosinopenic response was noted. Within 12 hr., the patient became afebrile, and remained so thereafter. She received a total of 700 mg. of cortisone within a four-day period. She was then maintained on 100 mg. daily for four days, at which time the early manifestations of a Cushing's syndrome were observed; notably, a "moon facies" and plethoric appearance. Serum electrolyte studies revealed the development of a hypokalemic hypochloremic alkalosis. The patient was treated with potassium chloride and testosterone proprionate, with subsequent reversal of these findings. Cortisone therapy was reduced to a daily dosage of 25 mg.

During the first four days of cortisone therapy, the white blood cell count dropped to 7,800, with a normal differential. The sedimentation rate (Cutler method) remained elevated, being 30 mm. in one hour. Two days later, the patient's white blood cell count rose to 17,000, with a marked neutrophilia. Serial counts were consistently in the same range, until the 22nd day of cortisone therapy, when a normal white cell count and differential and a normal sedimentation rate were recorded.




Clinical and laboratory course of L. S.

The patient's course was one of continued marked improvement. Cortisone therapy was discontinued after 28 days of treatment; a total of 1.6 gm. had been given. Ambulation was gradually achieved.

The patient has remained clinically well to date, and all laboratory examinations have been within normal limits.

## COMMENT

The essential features of the nonsuppurative complications of hemolytic Streptococcus disease and the importance of the concept of the poststreptococcic state have been emphasized by many investigators [3] in recent years. Rantz and his associates [1a] studied a large number of cases of sore throat caused by group A hemolytic streptococci in young adults. Although complete and uneventful recovery occurred frequently, convalescence in many instances was marred by the development of a complication. These complications included prolonged and persistent fever, general toxicity, skin manifestations, arthritis, adenitis, carditis, pneumonia and glomerulonephritis. In individual cases, there were noted nonsuppurative sequelae, ranging from few to many and varying in intensity from mild transient states to those

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producing extreme debility. In fatal cases, Mallory and Keefer [1b] described anatomic changes in the heart, kidneys, liver, spleen, lungs and pancreas.

## SUMMARY AND CONCLUSIONS

The case presented describes the development in a young white woman of a typical hemolytic Streptococcus infection of the throat. In spite of early and adequate antibiotic therapy, she continued to manifest prolonged unremitting fever. Subsequent complications included a scarlatiniform rash, transient arthritis of the knee and ankle, a grade II mitral systolic murmur, a transient pericardial friction rub, a left lower lobe pneumonia and pleural effusion, anemia, leukocytosis with pronounced neutrophilia, progressive generalized toxicity, and a downhill course leading to extreme debility.

The chart illustrates the clinical and laboratory course of this patient, and her complete lack of response to specific antibiotics, salicylates and general supportive measures. It thus seems evident that this case fulfilled the criteria previously defined for the poststreptococcic state.

After the original observations by Hench [4] and his group, many workers have confirmed the fact that patients with rheumatic fever demonstrate a dramatic improvement when treated with cortisone. Because of the proved ability of cortisone as an agent capable of inhibiting the tissue response of rheumatic fever, it was felt that it should be effective in treating other of the nonsuppurative complications of hemolytic Streptococcus infections. For this reason, cortisone was thus administered to this patient. It was followed immediately by the rapid disappearance of all the features of the poststreptococcic state.

It appears possible that the mechanism of cortisone's favorable influence on the manifestations of the poststreptococcal state depends on the ability of the adrenal oxysteroids to alter the allergic tissue reaction that follows the union of antigen and antibody.[5] This hypothesis would tend to be supported by the work of Mallory and Keefer,[1b] which suggested that the anatomical lesions found in the tissues of fatal cases of hemolytic streptococcal infection were due in part at least to an antigen-antibody reaction.

It has been further emphasized by Selye [6] that certain fundamental hormonal homeostatic mechanisms occur during stress situations. It has been shown experimentally and at least implied clinically that during periods of excessive stress, this hormonal self-regulation breaks down. It is felt that in some of the collagen disorders and related diseases, there exist complex metabolic disturbances, which necessitate prolonged replacement of adrenal steroids, and in certain of these, probably permanent replacement. On the other hand, in states where the "alarm reaction" has been initiated by bacterial infection and where an antigen-antibody relationship exists, in our experience, the process has been reversible.

We would thus agree with Hench, who observed that the action of cortisone appears to be group specific rather than disease specific or nonspecific, and that cortisone perhaps constitutes one of the body's chief defenses against the action of certain agents on certain tissues.

United States Marine Hospital, Staten Island.

# ACTH AND CORTISONE IN THE ACUTE CRISIS OF SYSTEMIC LUPUS ERYTHEMATOSUS

*John R. Haserick, M.D.*
*A. C. Corcoran, M.D.*
*and*
*Harriet Dustan, M.D., Cleveland*

Management of systemic lupus erythematosus with cortisone or pituitary adrenocorticotropic hormone has now been resolved into two phases: the first consists of the control of the disabling manifestations of the disease with cortisone and pituitary adrenocorticotropic hormone, and the second of a maintenance program that sustains this remission but does not elicit the side effects of hypercorticoidism. The acute lupus crisis, such as is described below, is in some ways a thing apart from either phase and is usually fatal. The purpose of this report is to describe the treatment of the acute lupus crisis with massive doses of cortisone or pituitary adrenocorticotropic hormone.

Sixteen patients with systemic lupus erythematosus have been treated with these drugs at the Cleveland Clinic Hospital since October 1949. In each case the plasma lupus erythematosus test gave positive results. Four patients have died, but none since we have begun the use of the large doses. Four have entered acute lupus crises, either spontaneously or during attempts to withdraw cortisone. All of these were successfully treated with the massive dose technic. One such patient is reported in brief.

## REPORT OF CASE

A woman, aged 23, was admitted to the Cleveland Clinic Hospital on Oct. 18, 1950. In October 1948, she noticed sudden onset of pain, swelling and redness of the interphalangeal joints of both hands. Her condition responded to salicylates until January 1949 when the arthritis recurred. A fever of 102 F. developed, and she was hospitalized elsewhere. The diagnosis was rheumatoid arthritis. Gold injections were begun, with gradual improvement in her condition. A complete remission occurred in April 1949, and she returned to work. Joint pains recurred in October 1949. Shortly thereafter a temperature of 104 F. was noted in association with pleural pain and effusion. From the left thoracic cavity, 2.6 liters of fluid were removed. Her condition became steadily worse, requiring frequent hospitalization.

Physical examination revealed an asthenic, pale, orthopneic white woman. The temperature was 102.2 F. and pulse rate 100 per minute. The blood pressure was 90/70 (mm. Hg.). A few shotty nodes were felt in the posterior cervical region. The skin was clear. Examination of the chest revealed dulness of the bases with decreased tactile fremitus. The breath sounds were absent in the left base and diminished on the right. Sinus rhythm was

4. Hench, P. S.; Slocumb, C. H.; Barnes, A. R.; Smith, H. L.; Polley, H. F., and Kendall, E. C.: Effects of Adrenal Cortical Hormone 17-hydroxy-11-dehydrocorticosterone (Compound E) on Acute Phase of Rheumatic Fever: Preliminary Report, Proc. Staff Meet., Mayo Clin. **24**:277-297 (May 25) 1949.

5. Thorn, G.; Forsham, P. H.; Frawley, T. F.; Hill, S. R.; Roche, M.; Staehelin, D., and Wilsin, D. L.: The Clinical Usefulness of ACTH and Cortisone, New England J. Med. **242**:783, 1950.

6. Selye, H.: The Alarm Reaction and the Diseases of Adaptation, Ann. Int. Med. **29**:403, 1948.

Public Health Service Postdoctorate Research Fellow (Dr. Dustan).
From the Department of Dermatology and Research Division, Cleveland Clinic.

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noted. The spleen reached one finger's breadth below the costal margin. The neurologic examination was normal.

Laboratory studies revealed hemoglobin to be 8 Gm. per 100 cc. Leukocyte count was 1,500 per cubic millimeter; in the differential count, neutrophils were 51 per cent, lymphocytes 36 per cent and monocytes 13 per cent. The plasma lupus erythematosus test [1] gave positive results. The sedimentation rate (Rourke-Ernstene) was 0.75 mm. per minute (the normal being less than 0.45). There were no total blood eosinophils.[2] Blood chemistry determinations (urea, sugar, serum sodium, potassium, plasma carbon dioxide-combining power and chlorides) were normal. Plasma proteins (electrophoretic technic) totaled 5.97 Gm. per 100 cc., albumin 2.69 Gm., alpha globulin 0.55 Gm., beta globulin 1.22 Gm., gamma globulin 1.18 Gm. and fibrinogen 0.3 Gm. per 100 cc. Urea clearance was 68 per cent of normal. A 12 hour urine specimen taken at night contained protein 1.05 Gm., casts 2,000,000, erythrocytes 1,200,000 and leukocytes 24,000,000.

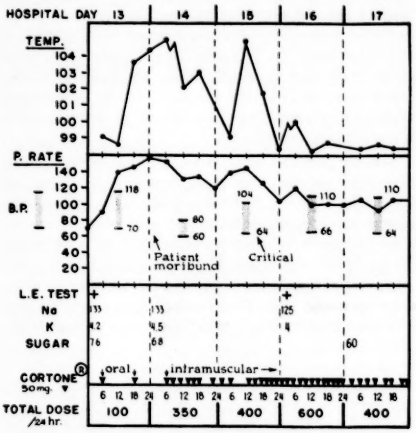


Chart of woman, aged 23, in acute lupus crisis. Note response to cortisone given at two hour intervals. B. P. represents blood pressure (mm. Hg.).

On 200 mg. of cortisone daily the temperature and pulse rate became normal within 48 hours. The drug was administered orally in one-half glass of milk in divided doses of 50 mg. every six hours. Antibiotics were concurrently administered. On the thirteenth hospital day the pulse rate rose from 84 to 140 per minute. In a few hours the temperature rose from 98.8 F. to 105 F., and the patient seemed moribund (chart). Respirations were rapid and shallow. The pleural effusion was greatly increased. The cortisone dosage was increased to 50 mg. given intramuscularly every two hours. A definite improvement was noted within six hours, and after 12 hours the dose was changed to 50 mg. every four hours. After three such doses the patient's condition again became critical, and the two hour regimen was resumed. A total of 600 mg. was administered within 24 hours. Though the clinical improvement was striking, there was no important change in the laboratory findings. The results of the plasma lupus erythematosus test remained positive, and the sodium, potassium and sugar levels were unchanged. Proteinuria decreased. The patient was subsequently started on pituitary adrenocorticotropic hormone and is now clinically well on 40 mg. of pituitary adrenocorticotropic hormone per day.

1. Haserick, J. R., and Bortz, D. W.: New Diagnostic Test for Acute Disseminated Lupus Erythematosus, Cleveland Clin. Quart. **16**: 158 (July) 1949.

2. Forsham, P. H.; Thorn, G. W.; Prunty, F. T. G., and Hills, A. G: Clinical Studies with Pituitary Adrenocorticotropin, J. Clin. Endocrinol. **8**: 15 (Jan.) 1948.

## COMMENT

Acute lupus crises were successfully treated in three other patients. Cortisone was administered in two, and pituitary adrenocorticotropic hormone in one. The short interval, large total dose technic was used in each instance. Aside from our usual precautions, such as low sodium diet, supplementary potassium and antibiotics, no special regimen was followed. In two patients, large doses of cortisone resulted in a decrease in proteinuria, and in one of these a decrease in hematuria occurred. Protein excretion fell from 18 Gm. daily to 4 Gm. in one patient, from 3 Gm. daily to 1 Gm. in the other patient. The urinary abnormalities were not intensified during the lupus crisis in a fourth patient, and massive doses of cortisone did not alter them significantly. After three days of intensive treatment the results of the plasma lupus erythematosus test became negative in one patient. They remained so during several weeks of maintenance steroid therapy but became positive again during a subsequent relapse. In the other three patients the massive doses failed to alter the positive results of the plasma lupus erythematosus tests.

Cortisone and pituitary adrenocorticotropic hormone each have their place in the management of systemic lupus erythematosus. We have previously considered cortisone the slower of the two in inducing a lupus remission. It is now evident that, given orally or intramuscularly in large enough doses, cortisone may produce an even more rapid clinical response than comparable dosages of pituitary adrenocorticotropic hormone. In the management of chronic cases, cortisone given orally is well tolerated and definitely preferred to intramuscular administration by the patients.

On the other hand, it is our experience that pituitary adrenocorticotropic hormone is preferable in the lupus patient with the volatile, stormy course. Relapses during pituitary adrenocorticotropic hormone are less severe and, because they are slower in onset, can be detected before the condition of the patient deteriorates into an acute lupus crisis.

It is not recommended that the short interval, massive total dose technic be used except during the acute lupus crisis when the patient's status is desperate and irresponsive to the usual doses. Most patients in relapse but not in crisis respond to about 200 mg. of either drug per day. When a satisfactory response has been established, the total daily dose is gradually diminished. The aim is to find a minimal level consistent with the patient's well-being. We no longer discontinue the drugs entirely, though an attempt is made to diminish the dose progressively over several months.

The onset of an acute lupus crisis can often be traced to intercurrent infection. Consequently, antibiotics are given in full doses during the acute phase as an adjunct to cortisone and pituitary adrenocorticotropic hormone therapy. They are often continued in smaller, bacteriostatic doses as adjuncts to the maintenance routine.

## SUMMARY AND CONCLUSIONS

Sixteen patients with systemic lupus erythematosus have been treated with pituitary adrenocorticotropic hormone and/or cortisone at the Cleveland Clinic Hospital. Both drugs have been found to be invaluable in the con-

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trol of the acute phase, as well as during the maintenance periods, of the disease. Four patients with acute lupus crises responded favorably to short interval, massive total doses. No untoward clinical or laboratory findings were noted. Such treatment is recommended in these desperate situations. Smaller doses are effective in most patients, and still smaller doses suffice in prolonged management. Thus it seems likely that the need for adrenal hormones varies with the severity of the process.

ADDENDUM

Since this manuscript was submitted, we have observed a girl, 13 years of age, during an acute lupus crisis that did not respond to cortisone in doses of 250 mg. daily.

The crisis was evidenced by severe malaise, high fever, epileptiform convulsions with dysrhythmic electroencephalographic patterns, retinal exudates, proteinuria, cylindruria and hematuria. In spite of antipyretics and tepid sponging, her condition became critical with fever ranging from 100.1 to 104.6 F. on the oral administration of 350 mg. of cortisone daily. Her condition deteriorated further the following day with fever ranging from 100 to 105.6 F. A total cortisone dosage of 900 mg. (given intramuscularly every three hours) resulted in some improvement; her condition was still critical, and her fever was only slightly less the next day on a dosage of 1,050 mg. The dosage was then increased to a total of 2,300 mg. (100 mg. every hour) for one day. Her condition improved greatly, and the next day her temperature ranged only from 98 to 99.8 F. Cortisone dosage was reduced to 1,400 mg. and on succeeding days was further decreased. The patient died two weeks later of an untoward complication.

The partial remission obtained with what we believe to be the largest recorded daily dosages of cortisone illustrates the principle of massive dose therapy in acute lupus crisis.

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## VINEGAR EEL IN SPUTUM

### REPORT OF A CASE

*G. Hal DeMay, M.D.*
*Robert S. Long, M.D.*
*John R. Schenken, M.D.*
*and*
*Eugene E. Simmons, M.D., Omaha*

The following brief case report is presented as an illustration of an unusual finding in a routine examination of a sputum specimen.

N. H., a white male manufacturing executive, 50 years of age, was admitted to the hospital March 28, 1950, for investigation of an acute episode of rather profuse hemoptysis. The clinical history revealed that he had had a chronic productive cough since childhood and pulmonary hemorrhage had occurred on two previous occasions. The bronchogram confirmed the clinical diagnosis of extensive saccular bronchiectasis involving chiefly the left lower lobe and the lingula. The rest of the lung fields were roentgenographically normal in appearance. Routine sputum examinations disclosed the presence on one occasion of an organism resembling the larva of Filaria, Strongyloides or hookworm. Inasmuch as a fresh disposable sputum cup was used for each specimen, the organism was not thought to be a contaminant. The question at once arose as to whether the pulmonary pathology could be due to persistent or recurrent infection with one of these organisms. Several fresh stool specimens were examined, and no ova, larvae or adult forms of these organisms were found. On closer examination, the specimen found in the sputum appeared to be much broader than the filaria larva, but the buccal cavity was not well enough preserved to permit differentiation from that of Strongyloides or Necator americanus. It was then suggested that the specimen was probably Anguillula aceti, commonly known as the "vinegar eel." The patient was then questioned, and it was found that he had eaten spinach and vinegar the evening before the sputum cup was collected. Examination of vinegar from the kitchen where the patient had been served disclosed the presence of many vinegar eels identical with the specimen found in the patient's sputum. The patient subsequently underwent left lower lobectomy and lingulectomy. The gross and microscopic pathology were characteristic of chronic saccular bronchiectasis, and no larvae were found in the surgical specimen.

From the Departments of Pathology and Internal Medicine, University of Nebraska College of Medicine and Nebraska Methodist Hospital.

COMMENT

A brief survey of the literature has not revealed a previous report of this unusual finding. It is of interest in that it illustrates how a common nonpathogenic organism may contaminate a laboratory specimen and confuse a clinical diagnosis as to correct etiology.

826 Medical Arts Building.

## DIVERTICULUM OF THE STOMACH

### REPORT OF A CASE

*Norman Van Wezel, M.D., Foley, Ala.*

In July, 1948, Bralow and Spellberg reported 26 new cases of diverticulum of the stomach. They also reviewed the 150 previous cases which Moses had covered up to 1946 in his review. This indicates that in the hundreds of thousands of gastrointestinal studies made, there are very few cases of diverticulum of the stomach reported. The small number of cases reported may be due to two things: either an actual rarity of stomach diverticula or the fact that they are overlooked. Since this is the first time that I have seen this condition in private practice, I am therefore reporting this case.

In large clinics diverticulum of the stomach has been reported as occurring in from 0.02% to 0.65% of all gastrointestinal studies. Though diverticula of the gastrointestinal tract may occur in any part of the intestinal tract, the portion of the tract in which they least occur is the stomach. When they occur in the stomach, the most common location is on the lesser curvature on the posterior surface of the cardia. Age incidence or sex difference has not been determined because the cases are too few to tabulate.

The types of diverticula are the congenital, the acquired, and the false. In the congenital type, all three walls of the stomach are within the diverticulum, and the patient is, of course, born with this deformity. Acquired diverticula are divided into two types, the pulsion type and the traction type. The pulsion type is probably due to an ulcerated area with some increase in the intragastric pressure. In the traction type there is some external inflammatory process that produces a local adhesion and pulls the diverticulum externally. A false diverticulum is probably due to some break in the wall, so that there is actually a hernia of the mucosa or the submucosa through the musculature. This is not considered a true diverticulum.

Symptoms of diverticula of the stomach may not be present. Many patients with stomach diverticula are labelled neurotic or psychoneurotic for a long time. In reviewing the cases, it will be found that some diverticula have definitely been proved to produce symptoms, because on the removal of the diverticulum the patient's complaining symptoms were also removed. However, it is probable that most stomach diverticula are asymptomatic. The diagnosis, of course, can be made only by x-ray. It can then be confirmed by surgery or exploration. Diverticula are often difficult to confirm at operation because of the relative degree of inaccessibility of the diverticulum at the time of operation. When the examiner is convinced that the diverticulum is causing symptoms, then surgery is indicated. However, in the case reported below, the patient was completely relieved by proper drainage, which he obtained by lying on his left side immediately after eating. It is because of this incidental finding and the conservative treatment that this case is being reported for the literature.

### REPORT OF CASE

W. H. O., a 39 year old white married man, a mechanic by trade, was referred for x-ray examination by Dr. J. M. Michaelson.

His history revealed that throughout his entire life he was sensitive to milk, and he had perennial hayfever. He attributed most of his digestive disturbances to the inadvertent use of milk. However, six months before examination he was found to have undulant fever. After this, bronchitis developed, which was treated by antibiotics, and he then broke out with a generalized rash, which was thought to be due to the antibiotics. Following this, his digestive symptoms, which had always, in the past, been due to milk, returned. This time, however, there had been no ingestion of milk. The indigestion consisted of heartburn, or pyrosis, with a crowding of his heart. There was some nausea but no vomiting and some sharp sticking pains in the region of the right nipple. Belching or ingestion of soda did not give him relief. He now noted that when he had this heartburn he began to break out with some urticaria. This same syndrome, namely, the heartburn, or pyrosis, followed by the urticaria, in the past had been attributed to milk and, occasionally, to simple nervousness. It was with this clinical diagnosis, namely, a gastric neurosis complicated by an allergic state, that he was referred for x-ray studies.

A complete physical examination revealed no abnormalities except a pale boggy nasal mucosa consistent with hayfever. The laboratory studies were all within normal limits, except the examination of the blood smear, which showed 10% eosinophils.

The x-ray examination revealed that the patient had a diverticulum on the posterior surface of the lesser curvature near the cardia of the stomach. This would vary in size. On the most medial surface of the diverticulum there was an irregularity which has not changed.

### COMMENT

It is to be emphasized that the diverticulum varies in size, either because of incomplete filling or because of overdistention and contractions. The patient has been completely relieved of all of his symptoms by assuming a left lateral recumbent position immediately after eating. He has had no other therapy except the usual avoidance therapy for his food allergy. Because of its contractibility, it is probably a true diverticulum of the congenital type.

The above case is presented to serve as a record of an unusual condition of the stomach so that it may be tabulated with other studies and, also, to demonstrate the relief of symptoms as obtained by the simple procedure of assuming the proper postural drainage.

301 W. Laurel Avenue

## CLOSTRIDIUM BOTULINUM IN A FATAL WOUND INFECTION

*Joseph B. Davis, M.D., Marion, Ind.*
*Lida H. Mattman, Ph.D.*
*and*
*Marjorie Wiley, A.B., Philadelphia*

Clostridium botulinum has been studied extensively because of its power to cause a fatal type of food poisoning. Animal studies have shown, that, at least experimentally, it can produce its toxin also when inoculated intramuscularly. To our knowledge, however, a serious infection with this organism has never been reported in man. In fact, the bacillus has been found in human wounds in only three cases, all reported by Hall [1] in 1945.

In Hall's cases, only one patient had any untoward symptoms. He suffered incipient gas gangrene with a temperature of 105 F., and induration with crepitus of his injured leg. Sulfonamide therapy and surgery were utilized with a final satisfactory result. The two patients without symptoms harbored Cl. botulinum type A. The first patient's organism was type B.

Studies on the intramuscular injection of Cl. botulinum into animals have shown that it is not difficult to produce fatal infections. The symptoms in animals inoculated by extra-oral routes are reported to be identical with the classical symptoms of botulism following toxin ingestion.

It is of interest to note how few spores may produce an infection when the tissue is necrosed by formaldehyde solution. In 1929 Coleman conducted such a study in guinea pigs and found that 25 heated spores could cause a fatal infection.[2] The symptoms occurred in three to four days, with death two to eight hours later.

When calcium chloride is injected with Cl. botulinum spores, infection is also facilitated, as shown by Edmonson, Giltner and Thom [3] in 1920. When the chloride and spores were in the same area the incubation period was short; when they were injected 3 to 4 cm. apart the incubation period was sometimes lengthened to two weeks.

Botulinum may spread from the original site through the blood stream as indicated by Orr,[4] 1922, who found that the bacillus could frequently be recovered from the spleen when it was examined several days after an intramuscular injection.

Most of the workers doing experimental studies have found great differences in pathogenicity among various strains of the organism, and varying susceptibility in individual animals.

### REPORT OF CASE

On Nov. 6, 1943, a 15 year old white girl was admitted to the Philadelphia General Hospital Fracture Service 20 min. after she had fallen from her second-story bedroom to the

Dr. Mattman is now Assistant Professor of Bacteriology, College of Liberal Arts, Wayne University, Detroit.

From the Surgical Service of Dr. William H. Erb, Philadelphia General Hospital, and the Harrison Department of Surgical Research, University of Pennsylvania.

1. Hall, I. C.: The Occurrence of Bacillus botulinus, Types A and B, in Accidental Wounds, J. Bact. **50**: 213, 1945.
2. Coleman, G. E.: Intramuscular Infection of Guinea Pigs with Spores of Clostridium botulinum, Am. J. Hyg. **9**: 47, 1929.
3. Edmonson, R. B.; Giltner, L. T., and Thom, C.: The Possible Pathogenicity of Bacillus botulinus, Arch. Int. Med. **26**: 357 (Sept.) 1920.
4. Orr, P. F.: The Pathogenicity of Bacillus botulinus, J. Infect. Dis. **30**: 118, 1922.

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ground, landing on her feet. Both legs were splinted before she was moved to the hospital.

Physical examination revealed a superficial abrasion on the right lateral chest wall. The pulmonary status was normal. There was medial angulation of the left lower leg in the middle third. There was mobility and crepitus at this point, but no break in the skin. There was a 5 cm. jagged, open wound involving the lateral half of the right ankle through which the lateral malleolus protruded. This was caked with dirt and sand. The tibio-astragalar joint was dislocated medially and was filled with street filth. Circulation in the foot appeared to be normal, and a dorsalis pedis was palpable when the foot was rotated to approximate normal position. Sensation was normal in both legs and feet. Reflexes were not elicited in the lower extremities.

X-rays taken immediately on admission showed no evidence of fracture of the lumbar spine or the sacrum. There was a fracture of the left tibia and fibula in the midportion of the shaft, with lateral displacement of the fragments. There was a fracture of the medial malleolus and dislocation of the right ankle joint.

At operation, the exposed distal end of the right lateral malleolus was cleansed at length with copious amounts of warm saline and aqueous soap, and the wound enlarged longitudinally. The ligaments of the lateral side of the ankle joint were found to be ruptured, with the wound opening immediately into the joint space. When the joint had been cleansed completely, the ragged edges of the ligaments were excised and hemostasis obtained. Debridement was meticulous, and included all tissue which was not obviously viable and much viable tissue that could not be cleaned. Five grams of sulfanilamide crystals were placed in the wound. The skin, subcutaneous tissues, and lateral ligamentous structures were loosely approximated with four through-and-through interrupted black silk sutures. A rubber dam drain was placed behind the joint space, anterior to the Achilles tendon and brought out through a stab wound on the medial side to provide through-and-through drainage. Tissue was taken for culture.

Immobilization in approximate anatomical position was maintained by lateral molded plaster splints extending to the knee. The fractured left tibia was reduced by manual traction and immobilized with lateral molded plaster splints extending from the toes to the upper third of the thigh with the knee slightly flexed.

Postoperative x-ray study showed the left leg in nearly anatomical position. The position of the right ankle was satisfactory. When the patient was admitted to the ward after operation, her temperature was 98.8 F. (axillary), pulse 128, respiration 32.

Tetanus antitoxin in full prophylactic dose was given. The combined gas gangrene and tetanus antitoxin was not available. The patient was immediately started on sulfathiazole, later changed to sulfadiazine.[5]

Pain in the foot was noted at 8:30 a. m. of the first postoperative day, but investigation revealed no cause. Both legs were elevated. The temperature remained 99 to 99.8 F., with the pulse 80 to 100 per minute, respirations 30 to 40 per minute.

At 8:00 a. m. on the second postoperative day the temperature reached 101 F. The pulse was 90 and respirations 25. By evening the temperature was recorded at 101 F., pulse 130 per minute, respirations 30 per minute. The patient complained of pain in both feet, and it was noted that the right foot was cool.

Gas was discovered in the tissues on the third postoperative day (Nov. 9, 1943) extending to within 4 in. (10 cm.) from the knee. On that day radical incision of the leg, with slashes extending through the deep fascia from knee to dorsum of the foot, revealed normal tissue at the upper portion with good blood supply, but much necrosis and no free hemorrhage in the lower portion. The odor was typical of gas gangrene. Cultures were taken.

The leg was packed in ice and elevated. Polyvalent gas gangrene antitoxin, whole blood, plasma, and glucose were given. Extreme toxicity continued, and a guillotine type amputation was done through viable tissue just below the knee on the fifth day after injury.

The patient withstood surgery well, but did not show marked improvement after it although the previous treatment was continued.

X-ray examination of the left leg Nov. 16, 1943, ten days after injury, revealed a large amount of gas about the fracture site, extending almost to the head of the fibula laterally. Examination revealed crepitus over the middle third of the lower leg. The foot was pale but somewhat pink. A dorsalis pedis was not palpable.

On the same day, this leg was incised radically in a manner identical with the first procedure on the other leg. When this was done 150 cc. of foul pus was liberated with a gush, together with much gas and a distinct mousy odor. The family would not consent to amputation. X-ray therapy was given.

The patient gradually grew worse. On Nov. 20, (14 days after injury) she presented a striking picture of cyanosis, dysphagia, inability to speak and generalized muscular flaccidity. The mental processes seemed relatively unimpaired but diplopia and paresis of the extra-ocular muscles were apparent.

After this she became rapidly worse, and was pronounced dead 16 days after injury on Nov. 22. She had received intravenously a total of 55,000 units of perfringens mixed antitoxin in divided doses. She also had received five blood transfusions, each of 500 cc. of citrated whole blood. A lumbar sympathetic block with a 1% solution of procaine was repeated every 12 hr., following the original discovery of circulatory difficulties in the left leg. Intravenous fluids were administered in amounts sufficient to maintain urinary output in excess of 1,000 cc. daily. Sulfathiazole and later sulfadiazine were given in full dosage. Oxygen, opiates and sedatives were used as needed.

*Cultural Studies.*—The culture taken from the original wound showed beta hemolytic streptococci, a diphtheroid, alpha hemolytic streptococci, Clostridium tetanus, and an anaerobic gram-positive sporulating bacillus which was identified by mouse protection tests as Clostridium botulinum type A.[6]

Twelve mice were inoculated with the Seitz filtrate of a culture of this anaerobic rod. Two mice were left unprotected and the rest were divided into pairs and received one of the following types of antiserums: Cl. sordellii; Cl. botulinum type A; Cl. botulinum type B; Cl. tetani; Cl. novyi. Only the mice receiving Cl. botulinum type A antiserum survived. The other mice succumbed within 24 hr., exhibiting no symptoms except extreme weakness. This experiment was repeated with the same results. Cultural studies on the organism were also compatible with its identification as Cl. botulinum.

In the preliminary examination of the culture, separation of the Cl. botulinum from Cl. tetanus was accomplished by use of 6% agar in blood agar plates. It will be noted that the patient had received tetanus antiserum.

*Autopsy Report.*—Postoperative status: amputation of the right leg below the knee; wide incisions on the left leg below the knee. Comminuted fracture of the left tibia and fibula. Thrombosis of the left external iliac vein. Atelectasis, bronchopneumonia of the dependent portion of the lower lobes of both lungs with probable pulmonary embolism. Kidneys, swollen and congested. Liver, congested. Brain, acute and chronic passive congestion with hypoplasia of the circle of Willis.

A culture taken at autopsy from the wound of the leg which became secondarily involved, showed a beta hemolytic Streptococcus, and an alpha hemolytic Streptococcus, but no clostridia were isolated.

In 1929, Coleman [2] noticed in animal studies that occasionally growth of Cl. botulinum occurs in a very restricted area of involved muscle and that unless this particular area is examined no organisms may be found. Failure to isolate the organism in this instance cannot be regarded as proof of its absence at autopsy.

## COMMENT

The nature of the original wound, and, in the early stages, the clinical course of this case were identical with typical cases of gas gangrene infection. The failure to respond to the wide incision and the subsequent amputation of the leg in which the compound fracture occurred must be assumed to have resulted from a blood-borne contamination and subsequent infection of the

5. Penicillin was not available at this date for general use.
6. Serum for this examination was supplied by Dr. Ivan C. Hall.

hematoma about the simple fracture of the opposite (left) tibia.

The length of time which elapsed before death is striking, but most remarkable was the sudden alteration of the patient's appearance 14 days after injury, two days before death. (A two-week incubation period for parenteral botulism has been noted in animals.) Dysphagia and inability to speak resembled a pseudobulbar palsy. There was cyanosis, a generalized muscular flaccidity most apparent in paresis of the ocular muscles, and impaired respiratory effort followed by cyanosis. Up to this time and for a while thereafter the patient had been fairly alert mentally. The first subjective manifestation of the terminal phase was diplopia and inability to swallow even her own saliva.

The possibility of Cl. botulinum infection was not considered before the death of the patient, but in retrospect, the departures from the usual clinical course of the patient dying of gas gangrene mentioned above are striking in their resemblance to the described clinical course of botulism. None of those concerned with the care of this patient, however, had ever seen a case of food poisoning caused by botulism in a human being.

It cannot be stated definitely that this was a case of botulism from a wound infection. It is a case in which the patient died of gas gangrene of uncertain etiology. Perhaps, when more data on botulinum infections in human beings have been accumulated, it may be judged with more accuracy, or it may give a clue to problem cases of gas infection.

If serious botulinum wound infections do occur in man, a problem arises regarding diagnosis. The prolonged incubation of a culture necessary to demonstrate botulinum toxin, and the time which it frequently requires to obtain such an anaerobe in pure culture, makes cultural methods valueless for aid in possible therapy.

The findings of Coleman and Meyer,[7] 1922, might prove of interest in diagnosis. They inoculated serum of rabbits suffering from botulism into mice, with death of the mice resulting.

Active immunization to botulinum toxins has been accomplished in man by Reames and his associates.[8]

It might be of interest to include an examination of Cl. botulinum strains in the determination of the spectrum of antibiotics.

## SUMMARY AND CONCLUSION

A fatal wound infection is reported in which Clostridium botulinum type A was isolated.

A striking similarity to the clinical course of botulism is noted in the terminal phases of this case.

The possibilities of human wound infection with Cl. botulinum is discussed, and the difficulties of early diagnosis are emphasized.

Recommendation for treatment must await further experience and studies.

7. Coleman, G. E., and Meyer, K. F.: Some Observatibns on the Pathogenicity of B. botulinus (X), J. Infect. Dis. **31**: 622, 1922.

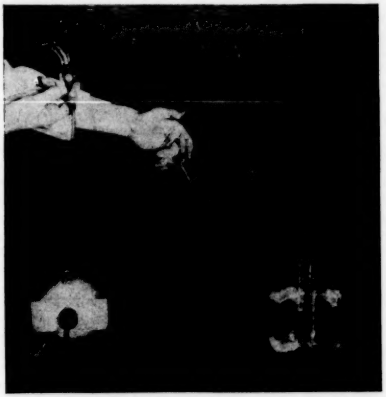
8. Reames, H. R.; Kadull, P. J.; Housewright, R. D., and Wilson, J. B.: 1947. Studies on Botulinum Toxoids, Types A and B. III: Immunization of Man, J. Immunol. **55**: 309, 1947.

# AEROSOL THERAPY

## VACUUM CLEANER AS A PRACTICAL SOURCE OF POSITIVE PRESSURE FOR NEBULIZATION

*John M. Sheldon, M.D.*
*Robert G. Lovell, M.D.*
*and*
*Kenneth P. Mathews, M.D., Ann Arbor, Mich.*

Since aerosol inhalation therapy was advocated by Barach, Segal, Abramson and others [1] for the treatment of pulmonary edema, bronchial asthma, chronic bronchitis and certain suppurative lung conditions, penicillin by aerosol inhalation, in addition to its parenteral injection, has been employed when antibiotics are indicated. Bronchial dilators and sympathomimetic amines also now are given by aerosol. Because the duration of aerosol treatment is long, and the treatment may be prescribed



DeVilbiss no. 40 nebulizer attached through "Y" tube to water filter jug and tank-type vacuum cleaner.

for weeks or months, the practical problem arises as to how such therapy can be carried out at home.

Efforts to provide a continuous stream of air pressure were made first by supplying a nebulizer with a rubber

From the Department of Internal Medicine, University of Michigan Medical School.

The isopropylepinephrine solution (Aerolin Compound) and one type of nebulizer used in this experiment were supplied by Eli Lilly & Company, Indianapolis.

1. (*a*) Barach, A. L.; Silberstein, F. H.; Oppenheimer, E. T.; Hunter, T., and Soroka, M.: Inhalation of Penicillin Aerosol in Patients with Bronchial Asthma, Chronic Bronchitis, Bronchiectasis and Lung Abscess: Preliminary Report, Ann. Int. Med. **22**: 485, 1945. (*b*) Barach, A. L.; Garthwaite, B.; Rule, C.; Talbot, T. R.; Kernan, J. D.; Babcock, J., and Brown, G.: Penicillin Aerosol and Negative Pressure in the Treatment of Sinusitis, Am. J. Med. **1**: 268, 1946. (*c*) Segal, M. S., and Beakey, J. F.: Management of Bronchial Asthma: Use of 1-(3',4' Dihydroxyphenyl) 2-Isopropylaminoethanol, Ann. Allergy **5**: 317, 1947. (*d*) Garthwaite, B., and Barach, A. L.: Penicillin Aerosol Therapy in Bronchiectasis, Lung Abscess and Chronic Bronchitis, Am. J. Med. **3**: 261, 1947. (*e*) Harsh, G. F.: A Comparative Study of Commercial Nebulizers, Ann. Allergy **6**: 534, 1948. (*f*) Abramson, H. A.: Principles and Practice of Aerosol Therapy of the Lungs and Bronchi, Ann. Allergy **4**: 440, 1946. (*g*) Abramson, H. A.; Reiter, C.; Sklarofsky, B., and Gettner, H. H.: Standardization Procedure for Determination of Aerosol Delivery of Nebulizers by Phenolsulfonphthalein Aerosols: Preliminary Report, Ann. Allergy **7**: 390, 1949. (*h*) Abramson, H. A.: Present Status of Aerosol Therapy of the Lungs and Bronchi, in Progress in Allergy, edited by P. Kallós, Basel, Switzerland, S. Karger, 1948, vol. 2.

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tube, which, in turn, was attached to a bicycle pump. This required another person to pump the nebulizer while the patient inhaled the medication. In the next attempt the inner tube from a bus or truck tire was inflated, and when it was connected to the nebulizer by a rubber tube continuous pressure for nebulization was supplied for a short time. But the inner tube had to be reinflated prior to each treatment. Patients living near a large city were fortunate in that they could rent tanks of oxygen. By attaching the nebulizer to a hose leading from the tank, a satisfactory stream of pressure was provided. But this method is expensive and inconvenient.

We undertook to find a simple means of providing a source of positive pressure in the home. The vacuum cleaner, an article usually available, was discovered to be an effective mechanism for delivering continuous pressure for aerosol treatment. A few individual types of vacuum cleaner were found to exert insufficient pressure for this purpose. However, any model which will power a paint sprayer attachment works well, since the nebulizer operates on the same principle.

The actual apparatus (fig.) is set up by obtaining a one-hole cork or rubber stopper and placing it on the attachment tube connected to the exhaust of the vacuum cleaner. Models which have no tube may be converted by putting a cork directly into the exhaust outlet. A 6 inch (15 cm.) piece of glass tubing, ranging from 5 to 8 mm. in diameter is placed through the cork and is attached to a 3 foot (91 cm.) length of rubber tubing. This is connected to a 10 inch (25 cm.) length of glass tube which goes through a two-hole rubber stopper placed in a gallon jug. The jug should be filled with enough water to cover the outlet of the glass tube leading from the vacuum cleaner. This cleans the air from the vacuum apparatus and prevents blowing dust into the nebulizer. Through the other hole in the two-hole rubber stopper in the jug, a short piece of glass tubing is run, to which is attached about 5 feet (1.5 meters) of rubber tubing. This is interrupted about 12 inches (30 cm.) from the end by a glass Y tube. The Y tube allows for escape of air when the patient is exhaling and when it is not necessary to blow air through the nebulizer. This cuts down on waste of medication and provides for the maximum delivery of a given dose when the patient inhales. Coordination between the inspiratory effort and the patient's finger which covers the Y tube when he inhales is easily managed but should be supervised by the doctor before he lets his charge begin a course of regular treatment by aerosol. A nebulizer which is attached to the end of the rubber tube may vary greatly in its ability to perform.[16] A type which we have found most satisfactory and which is reasonable in price is the DeVilbiss no. 40 apparatus. The nebulizer should be filled with 1 or 2 cc. of medication at a time, and care should be taken to see that the patient holds the nebulizer so that the opening does not direct toward the base of the tongue, but rather directly toward the posterior pharynx. If the patient tips it too far backward or upward, a great amount of medication is lost on the mucous membranes of the mouth. All stoppers should be removed from the nebulizer before aerosolization is started.

*Results of Experiment: Summary of Data*

| Type of Nebulizer | Source of Pressure | No. of Nebulizers Used | L. per Min. Flow | Medication Used | Average Amount Medication Delivered in 2 Min. (Gm.) | Remarks About Spray |
|---|---|---|---|---|---|---|
| DeVilbiss no. 40 | Compressed air | 4 | 8 | Water | 1.3 | Excellent |
| DeVilbiss no. 40 | Oxygen | 4 | 8 | Water | 1.4 | Excellent |
| DeVilbiss no. 40 | Vacuum cleaner 1 | 8 | 5.5 | Water | 0.25 | Satisfactory |
| DeVilbiss no. 40 | Vacuum cleaner 1 | 6 | 5.25 | Aerolin compound | 0.12 | Satisfactory |
| DeVilbiss no. 40 | Vacuum cleaner 2 | 4 | 6.5 | Water | 0.60 | Satisfactory |
| DeVilbiss no. 40 | Vacuum cleaner 2 | 4 | 6.5 | Aerolin compound | 0.34 | Satisfactory |
| DeVilbiss no. 40 | Oxygen | 6 | 8 | Aerolin compound | 0.70 | Satisfactory |
| Lilly | Compressed air | 6 | 8 | Water | 0.30 | Good |
| Lilly | Oxygen | 5 | 8 | Water | 0.40 | Good |
| Lilly | Oxygen | 6 | 8 | Aerolin compound | 0.20 | Good |
| Lilly | Vacuum cleaner 1 | 4 | 5.5 | Water | 0.10 | Good |
| Lilly | Vacuum cleaner 1 | 4 | 5.25 | Aerolin compound | 0.07 | Fair |
| Lilly | Vacuum cleaner 2 | 4 | 6.5 | Aerolin compound | 0.10 | Good |
| Vaponefrin | Oxygen | 4 | 8 | Water | 1.27 | Excellent |
| Vaponefrin | Oxygen | 4 | 8 | Aerolin compound | 0.80 | Excellent |
| Vaponefrin | Vacuum cleaner 1 | 4 | 4.5 | Water | 0.11 | Satisfactory |
| Vaponefrin | Vacuum cleaner 1 | 4 | 4.5 | Aerolin compound | 0.04 | Satisfactory |
| Vaponefrin | Vacuum cleaner 2 | 4 | 6.5 | Water | 0.10 | Satisfactory |
| Vaponefrin | Vacuum cleaner 2 | 4 | 6.5 | Aerolin compound | 0.17 | Satisfactory |
| Vaponefrin | Vacuum cleaner 1 | 4 | 5.5 | Aqueous penicillin 20,000 units | 0.30 | Satisfactory |
| DeVilbiss no. 40 | Vacuum cleaner 1 | 4 | 5.5 | Aqueous penicillin 20,000 units | 0.35 | Satisfactory |
| Lilly | Vacuum cleaner 1 | 4 | 5.5 | Aqueous penicillin 20,000 units | 0.10 | Satisfactory |
| Lilly | Oxygen | 4 | 8 | Aqueous penicillin 20,000 units | 0.30 | Excellent |
| DeVilbiss no. 40 | Oxygen | 4 | 8 | Aqueous penicillin 20,000 units | 1.25 | Excellent |

## EXPERIMENT

Three types of nebulizer were used, and at least four of each model were employed. Sources of pressure were as follows: compressed air at 7½ pounds (3.4 Kg.); oxygen from a tank, flowing at 8 liters per minute, and pressure from two different types of vacuum cleaner. One was an upright tank type (vacuum cleaner 1), and the other was a horizontal tank type (vacuum cleaner 2). Medications used were as follows: distilled water; 1:200 isopropylepinephrine mixed in a propylene glycol base with small amounts of procaine, atropine and an ephedrine-like compound [2] included; and aqueous penicillin with 20,000 units per cubic centimeter. These were chosen since they were a representative group of the characteristic types of medication given by aerosol. It was felt that if the rather oily mixture of "aerolin" were well aerosolized, and the aqueous solutions also were well dispensed, most other medications likewise would do well in the apparatus. Exactly 2 cc. of the liquids was placed singly into the nebulizers, and each was weighed. They were then attached one after another to the pressure source being studied,

2. Eli Lilly & Company, Inc., Aerolin compound, solution no. 50.

which in turn was attached to the jug and tubing. Pressure was applied for exactly two minutes in most cases. If the 2 cc. of material was completely dispensed before two minutes had elapsed, the time was recorded. The nebulizers then were reweighed and measured in grams. A flow meter was placed at the end of the system where the nebulizer had been and pressure applied, both with and without the nebulizer in place. Flow in liters per minute with the nebulizer in place was recorded.

### RESULTS

It was found that the amount of medication delivered by the vacuum cleaner apparatus was not so great as that released in an equal time when air pressure or oxygen was used. However, a clinically acceptable stream of mist was delivered by the nebulizers when attached to the vacuum cleaner apparatus. The aerosol material released by oxygen or air pressure was about four times as great as that yielded from vacuum cleaner pressure. This, however, is not discouraging because aerosolization by oxygen pressure usually is not conducted at 8 liters per minute, but more likely at between 4 and 6 liters per minute. Furthermore, a considerable quantity of the material nebulized by air or oxygen is wasted no matter how it is dispensed.

### SUMMARY

The prolonged use of nebulized medication has necessitated the development of some way in which aerosolization can be carried on in the patient's home. It has been shown that a nebulizer will dispense, by aerosol, medicaments such as penicillin and various sympathomimetic amines when attached to most modern models of vacuum cleaner in the manner outlined.

### ADDENDUM

The continued use of penicillin by inhalation over a long period of time may result in sore throat or irritation if given in too strong a concentration. We have found that penicillin when given by aerosol should be made from crystalline penicillin and should be administered in concentration usually no greater than 20,000 units per cubic centimeter. As a rule patients tolerate this strength of medication well.

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**Role of Drugs in Plant Economy.**—Another important field for future research, and one as yet almost unexplored, is the study of the way in which drugs are formed in plants and the function they fulfil in the economy of the plants in which they are found. It is a remarkable fact that, for almost every one of the numerous vegetable drugs in use today, there is no convincing explanation of their presence in the plant. The importance of quinine to the cinchona tree or of morphine to the poppy, for example, are complete mysteries. It is possible that some of the poisonous or obnoxious substances are a form of protection against grazing animals or the ravages of destructive insects and other pests. It is possible, too, that some drugs result from the combination of waste products formed in the vital processes of the plant, and represent a method of inactivating substances which might otherwise be harmful. Yet such explanations have little to commend them except plausibility; the factual evidence is scanty indeed. Information on these points is valuable, not only for its own sake, but also because any added understanding of the metabolic processes of plants may prove of great importance in solving outstanding agricultural problems.—T. I. Williams, D. Phil., Drugs from Plants, London, Sigma Books Limited, 1947.

# COUNCIL ON PHYSICAL MEDICINE AND REHABILITATION

*The Council on Physical Medicine and Rehabilitation has authorized publication of the following reports.*

HOWARD A. CARTER, *Secretary.*

## SCOTT DEMAND INHALATORS ACCEPTED

Manufacturer: Scott Aviation Corporation, 207 Erie Street, Lancaster, N. Y.

The Scott Demand Inhalators, Models A and B, are portable devices with face masks for controlling the administration of oxygen to patients from tanks of the compressed gas. As they are ordinarily applied, with the mask over the patient's face, the oxygen flows at any rate "demanded" by the patient, and (in the words of the manufacturer) "there is no interference with, nor any tendency to influence, the natural respiratory cycle." If greater assistance seems necessary, the pressing of a button starts a continuous flow of oxygen at slight positive pressure. If the supply of oxygen is depleted, a safety valve opens automatically and substitutes air for oxygen.

Model A is the lighter form of the apparatus, consisting essentially of the gauge assembly, the regulator proper, the connecting tube, and the mask. It weighs 2.6 kg. (5¾ lb.); for shipment it makes a package measuring 16 by 20 by 51 cm. (6 by 8 by 20 in.) and weighing 3.6 kg. (8 lb.). The foreign shipping weight (with wood shipping case) is 8.1 kg. (18 lb.).

Scott Demand Inhalator

Model B, with carrying case, is the heavier form. It measures 20 by 30.5 by 56 cm. (8 by 12 by 22 in.), and weighs 13 kg. (28¾ lb.). For shipment it makes a package measuring 35.6 by 25.4 by 61 cm. (14 by 10 by 24 in.) and weighing 22 kg. (48 lb.). The foreign shipping weight is 30 kg. (66 lb.). Motive power is simply that of the compressed gas and the patient's own respiratory movements.

Evidence of satisfactory construction was obtained from sources acceptable to the Council. It was emphasized that the devices are effective with patients whose spontaneous breathing is sufficiently fast and deep, and in addition is useful as an adjunct to manual artificial respiration, but is not adequate (and is not intended) for use in patients whose breathing is very slow or very shallow. The Council on Physical Medicine and Rehabilitation voted to include the Scott Demand Inhalators, Models A and B, in its list of accepted devices.

## AUDICON HEARING AIDS ACCEPTED

Manufacturer: National Earphone Co., Inc., 20 Shipman Street, Newark 2, N. J.

The Audicon Hearing Aids, Models 400 and 415, are electrical instruments of conventional design and construction. Excluding clips, switches, etc., they measure 73 by 57 by 20 mm. With batteries they weigh 124 gm. Without batteries, cord or receiver they weigh 76 gm.

Audicon Hearing Aid

Evidence of satisfactory construction and performance was obtained from sources acceptable to the Council. The Council on Physical Medicine and Rehabilitation voted to include the Audicon Hearing Aids, Models 400 and 415, in its list of accepted devices.

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## REPORT OF THE COUNCIL

*The Council on Physical Medicine and Rehabilitation has authorized publication of the following report.*

*The Council wishes to express its appreciation for the valuable cooperation of the Advisory Committee on Audiometers and Hearing Aids for its expert services. The Committee members are Drs. Gordon Berry, Richard K. Cook, Hallowell Davis, Kenneth M. Day, Edmund P. Fowler, Isaac H. Jones, Dean M. Lierle, M. H. Lurie, Douglas Macfarlan, and C. Stewart Nash.*

HOWARD A. CARTER, *Secretary.*

### HEARING AIDS AND ADVERTISING

The modern hearing aid is a triumph of electronic and acoustical engineering and Yankee ingenuity. Manufacturers of hearing aids are to be congratulated on their success. Electronically the modern hearing aid is essentially a small public address system except for size and weight. A hearing aid with batteries weighs as little as 5 to 10 oz., whereas a public address system may weigh as much as 25 to 50 lb. Many of the component parts of all makes of hearing aids are obtained from the same suppliers. One hearing aid manufacturer makes some of its vacuum tubes but in general the manufacturers buy them from one source. One manufacturer uses an electromagnetic microphone but most of the microphones are of the crystal type. The resistors, capacitors and other circuit components come from several sources and are similar to products used in other electronic instruments and devices. The outside case which houses the chassis is distinctive for each manufacturer and there are usually differences in the circuits that are employed. The modern electrical hearing aid is truly a significant achievement when one realizes that it has been less than 75 years since Bell invented the telephone.

Although the statistics are not clear, probably three million persons in the United States are sufficiently hard-of-hearing to need either hearing aids or lip reading or both. On the other hand, probably only 800,000 to one million hard-of-hearing individuals are willing to wear a hearing aid. The other two million are potential customers for hearing aids, and the manufacturers vie with one another to obtain their patronage. It also appears that these two million, if the estimate is correct, are not much interested in acquiring hearing aids. They probably have several reasons for not getting one. Three of these reasons are: 1. A sense of pride and a desire to conceal their hearing handicap. 2. They have a hearing defect which is not materially assisted by a hearing aid. 3. The first cost is too great.

It has not been many years since deafness and impairment of hearing occasioned ridicule and derisive laughter. The use of the old-fashioned trumpet provoked amusement, and some regarded the condition as a prelude to imbecility or senility. Therefore, it is little wonder that manufacturers of hearing aids today, bent on marketing their wares, make use of advertising with claims, sometimes implicit, often explicit, that "nothing shows," that "one's hearing is hidden," and that nothing is carried around that will reveal a handicapping hearing loss.

In the opinion of the Advisory Committee on Audiometers and Hearing Aids, this attitude is not a healthy one and can only lead to false hopes on the part of the prospective hearing aid wearer and to disappointment and bitterness which further handicap the hard-of-hearing person.

Advertising is for the purpose of announcing to the world that a manufacturer or dealer has a product or service to sell. In the words of the late Dr. Glenn Frank, "Advertising is the spark plug of industry." Advertising is also an educational medium. When advertising is used in its most ethical and commendable manner, it is an excellent educational medium. Thus publicity and propaganda can be used for good. But they can be used for evil too. The hearing aid industry is a highly competitive field and the method employed by most manufacturers to market hearing aids is through a dealer. The industry is dependent on the number of leads of prospective purchasers who can be reached. There seems to be a certain combination of credulity and optimism in the hard-of-hearing person, and, when alluring claims are made about secrecy and invisibility, these hard-of-hearing persons, eager to hear again and to satisfy their vanity, will answer but will be disappointed on learning of the deception. Even if the salesman is fortunate enough to sell an instrument, the hard-of-hearing individual will feel that he has been ensnared and misled.

During the last year or two, the Council has noted such phraseology as the following in advertising for various hearing aids:

"a fabulous new electronic ear which miraculously conceals deafness"; "no button in the ear"; "hide your deafness"; "you can hear better, farther and more clearly"; "the world's smallest hearing aid"; "the new invisible hearing aid"; "a new hearing aid is small, powerful and invisible"; "a revolutionary type of hearing aid"; "no batteries, no wires, it really is invisible"; "new miracle electronic ear hides deafness"; "let me show you how you can hear invisibly"; "you understand everything you hear"; "world's finest, smartest and smallest hearing aid"; "hear in secret."

The Council on Physical Medicine and Rehabilitation and its Advisory Committee on Audiometers and Hearing Aids must regard such clichés as misleading and unwarranted. The alleged concealment may amount only to the substitution of a flesh-colored tube for a wire.

The Council realizes that if manufacturers are to prosper in business they must sell hearing aids and encourage those who need hearing aids to buy them. However, the Council feels that misleading methods of persuading people to buy will not help but will have a tendency to pull down the level of integrity of the industry, and will strengthen the resistance that already exists in the minds of many hard-of-hearing individuals against buying the instruments.

The Council on Physical Medicine and Rehabilitation and its Advisory Committee on Audiometers and Hearing Aids believe that a great deal of misleading advertising and undesirable promotional activity can be remedied by a strong trade organization of the hearing aid manufacturers. Such an organization does exist, but it is new and is having its growing pains. Several years ago, Fair Trade Practices Codes for the Hearing Aid Industry were promulgated by the Federal Trade Commission. The general principles laid down in the codes would probably eliminate all or most of the advertising abuses if the manufacturers and dealers would pay more attention to them. The National Better Business Bureau is now working on a set of standards in cooperation with the American Hearing Aid Association.

The development of the truly effective hearing aids of the present day proved to be the most powerful factor in bringing about the virtual disappearance of quack devices from the market. In the same way it is to be hoped that the development of a more rational attitude on the part of the public toward hearing aids may bring about the disappearance of dishonest advertising. When people come to regard hearing aids as they now regard spectacles, there will be even less excuse than there is now for promotion by misrepresentation, and a hard-of-hearing person denied a hearing aid will complain as vehemently as would a myopic person denied spectacles. Some of the advertising in the past has made the hard-of-hearing person undeniably a victim and a dupe; a campaign of informative, educational advertising can put him in his rightful place as an intelligent person promptly availing himself of the latest products of modern electroacoustic laboratories.

The Council and its Advisory Committee will from time to time publish articles to call attention to misleading and unwarranted advertising of hearing aids. It will also continue its policy of recognizing well-made, ethically promoted hearing aids by publishing a list of instruments found acceptable.

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## PREVENTION OF CHRONIC DISEASE

The recent National Conference on Preventive Aspects of Chronic Disease,[1] convened by the Commission on Chronic Illness, demonstrated remarkable enthusiasm on the part of many national agencies and persons representing different professional fields, for working together on what has been aptly termed the common denominator aspects of chronic illness. Prevention, including the detection of asymptomatic chronic disease, is one such common denominator, because many chronic diseases have common causative factors or common causative settings, such as genetic factors, nutritional disturbances, emotional and environmental stress, and occupational causes. The conference represented a concentrated, concerted effort to explore avenues for more effective application of what is already known regarding the prevention of the major chronic diseases through control of known etiologic factors and through treatment of the earliest identifiable stages of these diseases. The final reports of the 12 working committees of the conference have now been prepared and sent to the conference participants. The commission has announced that a summary and a complete transcription of the conference proceedings and reports will be published.

A review of these reports reveals much thoughtful comment and many recommendations which deserve careful attention. In view of the current controversy over "screening," particularly "multiple screening," as a detection technique, the reports of two committees of the conference—on evaluation of detection and on detection in private practice—may be singled out as examples of the conference deliberations.

The Committee on Evaluation of Detection begins its report by defining screening tests as "procedures which sort out those who probably have abnormalities from those who probably do not." A complete periodic physical examination for every person is considered impracticable because of its expense and the limited number of physicians; therefore, rapid, inexpensive screening measures are needed. Their primary purpose is to bring persons with disease to physicians at an earlier stage than would otherwise be true. Although many such tests are now available, there is urgent need for their evaluation, with respect to the following criteria: 1. Reliability: How consistent are the results obtained by different techniques, at different times and under ordinary "field" conditions? 2. Validity: How often is the test right as determined by some final diagnostic process? 3. Yield: How many previously known and how many unknown cases are discovered by the tests? 4. Cost: What is the cost per test or per case found, in money and professional time? 5. Acceptance: How acceptable is the procedure to the public, the profession and to community agencies? The report stresses the need for insuring follow-up by physicians on presumptive "positives" but warns against unduly increasing the case-load on physicians through too extensive a screening program. The committee emphasizes the importance of evaluating emotional and psychological concomitants of the screening procedure and urges further study of this subject. Other points considered in need of special investigation are (1) how often screening tests should be repeated, (2) the effects of multiple screening projects on single screening programs, and (3) the practical limits of validity required for each disease and screening test, taking into account the prevalence and incidence of the disease, the expense of carrying out definitive diagnostic procedures and the psychological hazards involved, for example, in falsely indicating the possible presence of cancer.

The Committee on Detection in Private Practice distinguishes between detection and screening by terming the latter the "presumptive," rather than the definitive, "identification of ordinarily unrecognized disease." Important chronic diseases which can be detected at an early or "latent" stage are certain forms of cancer, certain forms of heart disease, (congenital, rheumatic, syphilitic), hypertension, malnutrition, obesity, visual defects, glaucoma, hearing defects, epilepsy, syphilis, diabetes, and pulmonary tuberculosis. The committee warns that detection of latent disease may have undesirable psychological effects if not carefully handled to insure that the patient does not exaggerate or misinterpret its significance. The committee's chief recommendation is that all physicians carry out detection in their own offices by utilizing the following procedures: (1) history, (2) physical examination, and (3) laboratory tests. However, recognizing the serious practical limitations to this recommendation, the committee suggests that mass screening tests be made available to physicians, as a service to which they may refer their patients. The committee listed 16 procedures or tests that could be incorporated into such a program.

These reports call attention to the fact that screening and detection, with some notable exceptions (such as chest x-ray on hospital admission), have been advocated largely with reference to the nonpatient population, and thus out of the normal physician-patient relationship. Although all "positive" cases are referred for final diagnosis to a physician, this attempt to establish a patient-physician relationship often fails. In view of the probably much higher "yield" of detection procedures when applied to persons who are already seeking medical care, Levin [2] has suggested that greater effort and attention be

1. National Conference on Chronic Disease: Preventive Aspects, Chicago, March 12-14, 1951.
2. Levin, M. L.: The Detection of Chronic Disease, presented at the Annual Meeting of the National Tuberculosis Association, Cincinnati, May 17, 1951.

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expended on this type of detection, which may be termed "clinical detection," [2] in addition to the nonclinical variety. While the value of case-finding among persons who are not under medical care is not questioned, it is probable that greater concentration for this purpose on persons who seek medical care would yield greater dividends in the prevention and control of chronic disease.

## THE BARUCH COMMITTEE ACHIEVES ITS GOALS

The announcement, on May 26, that the Baruch Committee on Physical Medicine and Rehabilitation had attained its objectives and was discontinuing its activities offered a magnificent example of the manner in which a voluntary effort toward the advancement of an important phase of medical practice can still be achieved in a free country by a willing group of workers. In this instance, the generosity of one person, Mr. Bernard M. Baruch, and the efforts of a group of medical scientists were responsible for extensive developments in the treatment of disease by physical agents and in the rehabilitation of disabled persons. The members of the Baruch Committee include Dr. John F. Fulton, Yale University; Dr. Charles G. Heyd, Columbia University; Dr. Andrew C. Ivy, University of Illinois; Dr. Frank H. Krusen, University of Minnesota (chairman); Dr. Chauncey D. Leake, University of Texas; Dr. Frank R. Ober, Harvard University; Dr. Winfred Overholser, St. Elizabeths Hospital, Washington, D. C.; Dr. Howard A. Rusk, New York University; Dr. Alfred R. Shands Jr., Alfred I. duPont Hospital for Crippled Children, Wilmington, Del.; Dr. Francis O. Schmitt, Massachusetts Institute of Technology; Dr. William S. Tillett, New York University, and Dr. Arthur L. Watkins, Harvard University. It is gratifying to note that Mr. Baruch's support of this new branch of medical practice will continue and that he has stated it will be his object to make further grants "to those who undertake the work with enthusiasm and beneficial results."

The activities of the Baruch Committee have been largely instrumental in bringing about (1) a marked increase in the teaching of physical medicine and rehabilitation in the medical schools of America, (2) an extensive increase in the number of residencies in physical medicine and rehabilitation, (3) advances in the rehabilitation of many thousands of wounded soldiers and sailors as well as still greater numbers of persons injured in civilian life, (4) recognition of the medical specialty of physical medicine and rehabilitation, (5) establishment of a new Section on Physical Medicine and Rehabilitation in the American Medical Association, (6) organization of an American Board of Physical Medicine and Rehabilitation to certify qualified specialists in the field, (7) stimulation of the establishment of community rehabilitation centers throughout the country, (8) clarification of the standards for determination of physical fitness of the workers of the nation, and (9) improvements in the teaching of medical physics.

One of the leading medical educators in this country commented: "Certainly I do not think that, in this country, any similar effort in medicine has achieved so great a degree of success in so short a period of time." Dr. Frank H. Krusen, chairman of the committee, assuredly was justified in stating, when he thanked his associates, "Mr. Baruch's generosity and your labors have been humanitarian contributions of tremendous magnitude toward the welfare of our democracy."

The success of this project is of especial significance at this particular time, when various leaders of medicine, education, statesmanship, and industry are embarking on a similar private enterprise in aid to medical education by establishing the National Fund for Medical Education. The successful completion of the work of the Baruch Committee presents definite proof of the fact that it is still possible to obtain significant advances in medical practice, teaching, and research in the voluntary American way. If the generosity of one philanthropist and the efforts of a relatively small group of medical scientists can accomplish so much, all who are interested in the free practice of medicine should look with assurance to the new National Fund for Medical Education, which has already received the generous financial support of many persons. Through the active efforts of medical scientists and others, it can achieve unlimited success.

## POSTPARTUM NECROSIS OF THE PITUITARY

Simmonds [1] in 1914 described a man with clinical symptoms suggestive of hypopituitarism and postmortem lesions the essential feature of which was the destruction of the pituitary. The syndrome represented a condition of insufficiency of the anterior lobe of the pituitary. Conditions capable of causing necrosis of the pituitary consist of tumors, cysts, gumma, massive tuberculous necrosis, granulomas of unknown etiology, hypophysectomy and healed postpartum necrosis of the anterior lobe of the pituitary.

Sheehan [2] described massive focal atrophy of the anterior pituitary, which occurs only in women and is nearly always of postpartum origin. The lesion is an ischemic necrosis similar in type to an infarct and occupying most of the anterior lobe. Sheehan reported 13 cases of fresh pituitary necrosis and one of healed pituitary necrosis observed in the course of two years at the Glasgow Royal Maternity and Women's Hospital. The necrosis was found in patients who died at any time from 14 hours post partum onward. Hemorrhage and collapse at delivery were present in all of his cases. According to Sheehan, the anterior pituitary hypertrophies normally during pregnancy to two or three times its normal size. The gland involutes rapidly during the puerperium. Presumably there is a sudden reduction of the blood flow to the gland at about the time of delivery, owing to severe hemorrhage. If, in addition, there is a severe

1. Simmonds, M.: Über Hypophysisschwund mit tödlichem Ausgang, Deutsche med. Wchnschr. **401**: 322, 1914.

2. Sheehan, H. L.: Post-Partum Necrosis of the Anterior Pituitary, Edinburgh M. J. 45 tr.: 13 (March) 1938.

general circulatory collapse, the blood flow to the anterior pituitary may for a short time be reduced almost to nothing. This may cause thrombosis in the sinuses of the gland, which in turn may lead to necrosis of the tissue.

Escamilla and Lisser [3] collected from the literature 595 cases with "more or less suggestive" evidence of Simmonds' disease. The diagnosis was established both clinically and pathologically in 101. The occurrence of loss of weight, amenorrhea and a low basal metabolic rate in a woman whose symptoms date from postpartum hemorrhage and collapse warrants, in their opinion, a clinical diagnosis of Simmonds' disease. They emphasize the frequent confusion of Simmonds' disease with anorexia nervosa. The latter usually occurs in young girls in the absence of a history of pregnancy. The condition not infrequently clears up with proper psychiatric and nutritional therapy.

Sheehan [4] in 1949 reported on autopsies in 95 cases culled from the literature and considered by him as definite examples of chronic severe hypopituitarism. These cases presented severe chronic fibroid lesions of the anterior pituitary, intracellular cysts and tumors and surgical hypophysectomies. The clinical symptoms and pathological lesions in these cases were compared with the various findings in 70 cases of clinical postpartum necrosis of the pituitary. Severe deficiency of the pituitary function is manifested clinically, according to Sheehan, by a syndrome made up of the following characteristics: in many cases a history of severe circulatory collapse as result of hemorrhage and shock at a delivery; atrophy of the gonads and genital tract with complete amenorrhea; impotence and loss of libido; complete loss of pubic and axillary hair; absence of normal skin pigment; a typical flabby facies with thinning of the eyebrows and pallor; increased sensitivity to cold; weakness; mental torpidity with slow speech; a low basal metabolic rate; very low urinary excretion of 17-ketosteroids; insulin sensitivity and hypoglycemia unresponsiveness, and a tendency to spontaneous hypoglycemia and coma. Sheehan stresses that patients with hypopituitarism face the grave danger of a particular type of coma which is often fatal.

Cook and co-workers,[5] in a recent publication, reported on seven cases of postpartum necrosis of the anterior pituitary observed at the university hospitals of the State University of Iowa during the period of 1935 to 1950. The diagnosis in four was verified by autopsy. A history of collapse from severe hemorrhage during the last delivery was obtained in six. In five of the six cases with adequate history there was amenorrhea with complete loss of sexual function and libido. These authors point out that, while anorexia may develop, it is not an important symptom and is never as extreme as in anorexia nervosa. They also stress the observation made previously by Sheehan, that cachexia and emaciation are not commonly seen in Simmonds' disease.

The treatment of anterior pituitary necrosis has thus far been disappointing. A replacement of the hormonal secretions with anterior pituitary extracts has not been efficacious. Knowlton [6] reports only "minimal changes" in a patient with long-standing hypopituitarism who was given corticotrophin (ACTH) during 10 days. Cook and his co-workers report good response in one patient from small doses of cortisone supplemented by high sodium chloride dietetic intake and thyroid medication. The role of both corticotrophin and cortisone in the treatment of pituitary insufficiency has not yet been determined. The best treatment so far seems to be prophylaxis, with better recognition and correction of the complications of pregnancy that lead to collapse during delivery.

3. Escamilla, R. F., and Lisser, H.: Simmonds' Disease: A Clinical Study with Review of the Literature; Differentiation from Anorexia Nervosa by Statistical Analysis of 595 Cases, 101 of Which Were Proved Pathologically, J. Clin. Endocrinol. 2: 65 (Feb.) 1942.

4. Sheehan, H. L., and Summers, V. K.: The Syndrome of Hypopituitarism, Quart. J. Med. 18: 319 (Oct.) 1949.

5. Cook, J. E.; Bean, W. B.; Franklin, M., and Embick, J. F.: Postpartum Necrosis of the Anterior Lobe of the Pituitary Gland: Sheehan's Disease, A. M. A. Arch. Int. Med. 87: 517 (April) 1951.

6. Knowlton, A. I.; Jailer, J. W.; Hamilton, H., and West, R.: Effects of Pituitary Adrenocorticotrophic Hormone (ACTH) in Panhypopituitarism of Long-Standing and in Myxedema, Am. J. Med. 8: 269 (March) 1950.

1. McKee, A. P.: J. Immunol. 63: 150 (Feb.) 1951.

## NONTOXIC INFLUENZA VACCINE

McKee,[1] of the University of Iowa department of bacteriology, reports the production of a nontoxic variant of influenza A virus, with immunizing properties superior to those of routine toxic influenza A virus. The virus used in this study was originally isolated from the 1943 outbreak in Iowa City and had been passed repeatedly in chick embryos but had never been in mice. Two methods of subculture were adopted. By the first method, 0.5 cc. of freshly harvested undiluted allantoic fluid (hemagglutination titer 1:6,400) was inoculated into the allantoic sac of a 11 day old chick embryo. By the second method similar inoculation was made with a 1:10,000 dilution of the same fluid. All inoculums contained 500 units per cubic centimeter of pencillin and streptomycin.

After 24 to 48 hours of incubation at 37 C., the hemagglutination titer was the same (1:6,400) in both series. The two series, however, differed widely in mouse toxicity. After the use of the dilute inoculum, the virus retained its original pathogenicity, almost invariably killing mice in two to three days followng intranasal injection, with autopsy showing almost complete pulmonary consolidation. After use of the undiluted inoculum, the virus was nonpathogenic, few if any symptoms being shown on intranasal inoculation in mice, whose lungs almost invariably were free from demonstrable lesions.

Used as primary vaccines in mice, the two viruses stimulate the production of almost identical antibody titers. As booster vaccines, however, the nontoxic variant is twice as effective as the toxic culture. In a typical experiment, the antibody level (hemagglutination-inhibition) rose to 5,120 units after a toxic booster inoculation and to 10,240 units after a nontoxic inoculation.

Clinical tests were made on 200 student volunteers. Each was given 1 cc. of formalized virus subcutaneously. Two weeks later, the antibody titer had risen to an average of 3,667 units after the toxic injection and to 5,216 units after the nontoxic injection. Twenty per cent of the

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100 students given the toxic vaccine had reactions such as general malaise, muscular aches, headache, or fever. Of the 100 students given the nontoxic virus, only 5% experienced similar discomforts. Marked reduction in the toxicity of the influenza virus following large inoculums into chick embryos was previously reported by Kempf and Harkness [2] of the University of Illinois.

## MEETING OF THE SUBCOMMITTEE ON STEROIDS AND CANCER

The recently concluded two-day meeting of the Subcommittee on Steroids and Cancer at American Medical Association Headquarters demonstrated that the collaborative study sponsored by the Subcommittee has evolved into an efficient reliable method for evaluating cancer therapy. Criteria for selecting cases of mammary cancer to be treated with the hormones, recommendations for optimum dosage schedules, and delineation of the advantages and shortcomings of this form of therapy have evolved as a result of the study, which was begun four years ago. The Subcommittee on Steroids and Cancer is a subcommittee of the Committee on Research of the Council on Pharmacy and Chemistry. At this year's sessions, 64 assembled oncologists initially heard an analysis of the pooled results of their reports to the Committee on Research and then engaged in panel discussion of the mechanism of action of the steroid hormones in mammary cancer. On the second day, the influence of the steroid hormones on neoplasms of the genitourinary tract and bone and newer developments in cancer research and therapy were discussed.

Review of the proceedings indicates that the role of the androgens and estrogens in the treatment of mammary carcinoma has been thoroughly assessed; therefore, widening of the scope of investigation to seek new cancer-inhibiting agents and new fields of application of the hormones seems desirable. Equivocal results were reported in hormone therapy of cancer of the cervix, endometrium, and ovary. More extensive study and analysis of pooled results are required before an opinion can be formed of the value of this therapy.

In addition to the sex steroids, cortisone and corticotrophin (ACTH) were tested in terminal cases of various types of neoplasia. These agents allay pain and induce a feeling of well-being but do not alter the course of the disease. In several cases, despite the subjective response and improved appearance of the patient, there was evidence of more rapid spread of the neoplasm and autopsy later even revealed that the spleen was riddled with metastases.

Tracer studies with radioactive estrogen in mammary cancer showed higher concentration of radioactivity in the involved breast tissue than in random samples from other tissues. Attempts at total pituitary inhibition by irradiation were unsuccessful as evidenced by 17-ketosteroid excretion, the corticotrophin and epinephrine tests, radioactive iodine up-take, basal metabolic rate, and gonadotropic assay. In another series, similarly treated, amenorrhea developed in several patients.

Total adrenalectomy was advocated to control increased adrenal androgen excretion in patients with prostatic cancer who had had prior orchectomy and estrogenic therapy. This may be a feasible procedure, since adequate adrenocortical substitution therapy is now available. The resultant cessation of androgen excretion may permit a longer period of control of the lesion.

Of diagnostic and prognostic importance was a report concerning variation in blood serum levels of the two antiproteases (antichymotrypsin and antirennin) in normal subjects and in cancer patients. Normal values range up to 5 West units for antichymotrypsin and above 5 units for antirennin. In cancer patients, these values tend to reverse, the antirennin titer dropping below, and the antichymotrypsin titer rising above, 5 units. The patient's response to therapy may be judged by rise in antirennin and fall in antichymotrypsin titer. These investigations of enzyme systems are merely preliminary and require tests in other chronic diseases, but they may disclose something of the nature of fundamental cancer-inhibiting mechanisms.

The investigators and the subcommittee are to be commended for their zeal and enthusiasm in pursuing these studies. They have not only established a pattern for future investigations of fundamental medical problems but also have demonstrated the ability of physicians to carry on a voluntary, cooperative, scientific research project during peacetime.

A complete transcript of the proceedings of the Second Spring Conference on Steroid Hormones and Mammary Cancer will be published in a limited edition for distribution to the investigators and other interested persons.

## CONTRIBUTIONS TO FOUNDATION DEDUCTIBLE

At the time the American Medical Education Foundation was established, application was made to the Commissioner of Internal Revenue requesting that he declare the Foundation exempt from federal income tax, on the basis that it is a corporation organized and operated exclusively for educational purposes. This application has now been acted upon, and the Commissioner has ruled that the Foundation is exempt from federal income tax under Provision 101 (6) of the Internal Revenue Code for the year 1951. This ruling means that contributions received by the Foundation in 1951 are deductible by the donors in computing their taxable net income in the manner and to the extent provided by Section 23 (o) and (q) of the Code.

This prompt ruling by the Commissioner should stimulate further support of the Foundation, since contributors are now assured that their contributions are deductible. Physicians desiring to make a donation to the Foundation will find a convenient contribution form included in the Foundation's announcement on pages 28 and 29 in the advertising section of this issue of THE JOURNAL.

2. Kempf, J. E., and Harkness, E. T.: Proc. Soc. Exper. Biol. & Med. 75: 80 (Oct.) 1950.

# ORGANIZATION SECTION

## THE WORLD MEDICAL ASSOCIATION—MEETING OF THE COUNCIL IN GENEVA

The Council of The World Medical Association held its mid-year session at Geneva, Switzerland, April 29 to May 6, 1951. The council, which is the governing body of the association between sessions of the General Assembly, meets twice a year. There are 12 nations represented in the membership of the council.

One of the most important events of the meeting was a two-day conference between officials of The World Medical Association and officials of the World Health Organization. This conference consisted of an informal exchange of views on important problems of mutual interest.

The topics covered by the discussions included the possibility of holding an international conference on questions of professional and technical education. It was agreed that tentative plans for such a conference would be submitted to the governing bodies of WHO and WMA. The purpose of the conference, which will be held in either 1952 or 1953, would be to stimulate the improvement of standards of training for medical and related personnel. This is a problem which both WHO and WMA consider essential in view of the urgent needs of underdeveloped regions for larger numbers of health personnel.

Other topics discussed included (1) measures to promote the free flow of essential medical supplies between countries and the difficulties caused by shortages resulting from the present world situation; (2) assistance to be given to WHO by The World Medical Association in the selection of suitable experts for work in various fields; (3) exchange of information and documentation on subjects of common interest, and contributions by each organization to publications of the other; (4) cooperation of The World Medical Association in assuring the widest possible adoption of international non-proprietary names recommended by WHO for drugs and pharmaceutical products with due recognition of recommendations of the discoverers of the products; (5) assistance of WHO, through its various publications, in making known the "International Code of Medical Ethics" adopted by The World Medical Association, and (6) representation of The World Medical Association in regional conferences of WHO.

The medical associations of Western Germany and Japan were elected to membership in The World Medical Association after a canvas had been made of the opinions of all member associations. It was brought out clearly that both applicants had gone on record as decrying war crimes and accepting the principles enunciated in the Declaration of Geneva as applying to all their members, present and future.

The Japan Medical Association adopted the following resolution March 30, 1949:

> "That the Japan Medical Association, representing the doctors of Japan, takes this occasion to denounce atrocities perpetuated on the enemy during the war period, and to condemn acts of maltreatment of patients which are alleged and in some cases known to have occurred.
>
> A. Takahashi, M.D.,
> President,
> The Japan Medical Association"

The Western Germany Medical Association adopted the following statement on Jan. 28, 1950:

"The German medical profession had to acknowledge with indignation and with deep regret the participation, during the time of the Third Reich, of certain German doctors, both individually and collectively, in numerous acts of cruelty and oppression, and in the organization and perpetration of brutal experiments on human beings without their consent. We acknowledge that, in performing these acts and experiments, which have resulted in the deaths of millions of human beings, the German medical profession has violated the ethical tradition of Medicine, has debased the honor of the medical profession, and has prostituted medical science in the service of war and political hatred. The convicted criminals have been punished, some by Allied, others by German Courts.

"We express our regret that the system of dictatorship rendered impossible insight into these occurrences and has strangled every expression of free opinion. We hereby declare that we abhor and reject the crimes perpetrated since 1933 in Germany and in other countries by members of our profession.

"In making this statement to the WMA we solemnly promise the medical profession and the whole world that we will do all we can to prevent in the future such a betrayal of medicine through German doctors. We hereby repeat our resolution adopted on October 18, 1947, on our initiative and published thereafter and refer to the reports issued by the "Arbeitsgemeinschaft Westdeutscher Aerztekammern" concerning the Nuremburg trials against 20 SS doctors, scientists and three high officials and to our position expressed in this publication. The German medical organization will do its best to prosecute medical men who shall be found guilty of offenses against their professional duties by professional jurisdiction. We shall act in the same manner against doctors who are not willing to promise a high standard of professional behavior in the future.

"Accordingly, the '52 Deutsche Aerztetag' in altering its professional regulations has required every doctor to subscribe to the Declaration of Geneva adopted by the W.M.A. in Geneva in 1948."

This statement was signed by Drs. Neuffer, Borck, Rodewald, Rieder, Stockhausen, Weiler and Weise, for the Arbeigsgemeinschaft der Westdeutschen Arztekammern.

Under the provisions of Article 6 II of the Constitution and Article 7 of the By-Laws, the Bulgarian Medical Association was announced as dropped from membership in The World Medical Association.

The number of national associations now members of The World Medical Association is 41. Applications were received or were announced as forthcoming from five other associations.

Reports were received from the assistant secretaries for Asia, Europe and Latin America as to conditions in their respective areas.

An extended discussion took place on social security as it affects medical practice and a progress report from the committee on that subject was accepted.

The Committee on Medical Education presented an important report and, following lengthy discussion, the Council voted to find ways and means of calling a World Conference on Medical Education in 1953. Other international organizations will be asked to participate. The tentative agenda for the conference will cover the following points: (*a*) What is the aim of undergraduate medical education? (*b*) What should be the requirements for entrance into medical school? (*c*) What should be the general character of the curriculum after entrance?

In discussion of these points, many details will be considered. The place of the conference will be somewhere in Europe.

The Council decided to study further the subject of medical certification to see what, if anything, can be done to simplify and standardize such certificates.

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The council studied in detail the proposal to establish an International Centre for the Study of Medical Jurisprudence. This proposal envisages that such a center would recommend, encourage and undertake studies of comparative medical jurisprudence, and draw conclusions from such studies and draft proposals concerning medical jurisprudence in both peace and war.

While the Council has no objections to the establishment of such a center for purposes of collecting and distributing information, it feels very definitely that such a center composed as it would be of those qualified to speak for only a small portion of the medical profession, would greatly exceed its prerogatives if it endeavored to lay down regulations governing the medical profession in peace and war.

The World Medical Association has already established an International Code of Medical Ethics. It is qualified to speak for well over 500,000 physicians and it has in its membership the national medical associations of 41 countries. If the Code requires any elaboration to cover a war-time situation, the organizations most qualified to discuss the matter are The World Medical Association, the World Health Organization, the International Committee of the Red Cross, and the League of Red Cross Societies, and certainly not the organizations concerned in establishing this proposed center. A resolution was drafted setting forth the opinion of the Council and is to be sent to all member associations and other organizations having any real or fancied interest in the subject.

Means of cooperation with the International Committee of the Red Cross, the League of Red Cross Societies, and the International Council of Nurses, as well as with the World Health Organization, were elaborated. Numerous matters of routine business were transacted and committee reports on miscellaneous subjects were discussed.

Because of the illness of the chairman, Dr. T. C. Routley of Canada, the meetings were presided over by the vice chairman, Dr. Pierre Glorieux of Belgium.

The social events in connection with the meeting were as follows: a reception tendered by the officials of the city of Geneva, a dinner by the Geneva Medical Society, a reception and dinner at Berne by the Federation des Medecins Suisses, receptions by the International Committee of the Red Cross, the League of Red Cross Societies, and receptions by various individuals resident in Geneva.

## REGISTRATION UNDER THE HARRISON NARCOTIC ACT

Physicians who are registered under the Harrison Narcotic Act or under the Marihuana Tax Act must effect reregistration on or before July 1 to avoid a penalty. Each year, despite the annual warnings in THE JOURNAL, this requirement is overlooked by some physicians, and unpleasant consequences follow. Failure to register adds a penalty of 25% to the tax payable and, in addition, subjects the physician to the possibility of a fine not exceeding $2,000 or to imprisonment for a maximum of five years, or to both. The commissioner of internal revenue has in past years given some tardy registrants the choice of paying sums by way of compromise, a procedure authorized by law, or accepting criminal prosecution. If this procedure does not produce the required promptness in reregistration, the commissioner will have no choice but to institute criminal prosecution.

## DR. ALBRIGHT RECEIVES GOLDBERGER AWARD

Dr. Fuller Albright, associate professor of medicine at Harvard Medical School, Boston, received the Joseph Goldberger Award in clinical nutrition for his continuing studies in the field, on June 13 during the Harvard Medical Alumni Association dinner in Atlantic City. The award, a gold medal and $1,000, named after the late Dr. Joseph Goldberger, who did pioneer work on pellagra in the southern states, was established to honor physicians who have made important contributions to the knowledge of nutrition and is made periodically by the American Medical Association to stimulate research in the field.

# MEDICAL LEGISLATION

## STATE

### Alabama

**Bills Introduced.**—H. 239, proposes regulations for the **sterilization** of mentally inferior, mentally deficient or feeble minded inmates in the Partlow State School for Mental Deficients. H. 308, proposes regulations providing a state **scholarship program** to promote the education of **nurses.** H. 315, proposes to provide a state **scholarship program** to promote the education of **Negro nurses.** H. 316, proposes an appropriation to provide facilities for a **nurses' educational program** in certain tuberculosis sanatoriums of the state

### California

**Bills Enacted.**—A. 1504 has become Chapter 580 of the Laws of 1951. It amends the Welfare and Institutions Code by adding regulations relating to **epileptics,** among which are provisions making it possible to commit such persons to state hospitals when they are in need of treatment or when they are suffering from mental illness in addition to epilepsy. S. 129 has become Chapter 540 of the Laws of 1951. It authorizes the State Department of Public Health to Prescribe and promulgate **minimum standards** of safety and sanitation in the physical plant, and **of diagnostic, therapeutic and laboratory facilities** for public medical institutions and to certify to the State Department of Social Welfare those institutions which meet the standards established.

### Connecticut

**Bill Introduced.**—H. 1705, proposes to broaden the scope of the Connecticut Medical Service Plans so as to include certain types of **dental surgery.**

**Bill Enacted.**—H. 549, has become Public Act No. 49. It amends the narcotic act by **defining the word "opiate"** as including all synthetic drugs having addiction-forming or addiction-sustaining properties similar to morphine and so proclaimed by the president of the United States under the provisions of the federal narcotic law.

### Florida

**Bills Introduced.**—H. 926, proposed the enactment of a child molester act, which would provide, among other things, for the **psychiatric examination** by two licensed psychiatrists of persons convicted under the act. Such psychiatrists should have had at least five-year exclusive practice in the diagnosis and treatment of mental disorders. H. 1062, proposes the creation of a special **hospital district** for Volusia County, Florida. H. 1332, proposes to authorize certain judges and county solicitors throughout the State to secure the services of a physician in connection with the **investigation of crime** or under circumstances where such services are deemed necessary for the investigation of crime. It also proposes to fix the fee to be paid to such physicians for the services which they render. H. 1385, proposes to authorize the Board of County Commissioners of Saint Lucie County to enter into contracts to provide and secure insurance on the employees of the county and the members of their family, which insurance shall provide funds to defray **medical, surgical, hospital, and other similar expenses** for such persons. H. 1440, proposes the creation of a special **hospital district** for Broward County, Florida. S. 876, proposes to authorize the City of Miami Beach, Fla., to establish a **health plan** for officers and employees of the city and their families.

**Bill Enacted.**—H. 150 became law without approval, May 22, 1951. It provides that any doctor or other practitioner of any of the healing sciences making a physical or mental examination of any person shall, upon request of such person, his guardian, curator or personal representative in the event of his death, furnish **copies of all reports** made of such examination or treatment. Such reports would not be furnished, however, except upon the written authorization of the patient, to any person other than his guardian, curator or personal representative.

### Maine

**Bill Enacted.**—H. 869 was approved May 21, 1951. It provides an appropriation for the purpose of supplying materials in connection with the accumulation, storage and maintenance of 5,000 units of **liquid plasma** and 500 units of dried plasma to be available in the event of a disaster.

### New Jersey

**Bill Enacted.**—A. J. R. 14 has become Joint Resolution No. 8 of the Laws of 1951. It creates a commission to examine and make a study of the laws dealing with the sale, dispensation, and distribution of **narcotics.**

### Texas

**Bill Enacted.**—H. J. R. 38 was adopted May 17, 1951. It proposes an amendment to the Constitution providing for the establishment of a state medical education board and a **state medical scholarship fund** from which grants, loans, or scholarships may be made to students desiring to study medicine, provided such students shall agree to practice in rural areas of the state.

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This summary was prepared by the Bureau of Legal Medicine and Legislation.

# MEDICAL NEWS

## CALIFORNIA

**Medical Officer at San Quentin.**—Dr. Morton D. Willcutts, Bethesda, Md., has been appointed chief medical officer for San Quentin Federal Prison to replace Dr. Leo L. Stanley, who recently retired after many years' service to the penitentiary. Dr. Willcutts, who retired from the navy after World War II with 34 years' active duty, began his new duties April 16.

**Southern California Gastroenterologists.**—The Southern California Society of Gastroenterology was organized in September, 1950, with subsequent meetings in November, January, and March. Drs. Albert M. Snell, Palo Alto; Donald C. Balfour, Rochester, Minn., and Walter L. Palmer, Chicago, have addressed the society. Meetings are scheduled on alternate months at the auditorium of the Los Angeles County Medical Association, 1925 Wilshire Blvd., Los Angeles. Present officers of the society are Dr. William C. Boeck, president; Dr. Grant Harold Lanphere, vice president, and Dr. Harold L. Thompson, secretary-treasurer, all of Los Angeles. Those interested in joining the society should make application to the Secretary, 2202 W. Third St., Los Angeles 5.

**Dr. Legge Receives Knudsen Award.**—Dr. Robert Thomas Legge, professor emeritus of hygiene and former university physician on the Berkeley campus of the University of California, has received the William S. Knudsen Award from the American Association of Industrial Physicians and Surgeons. The honor, given only eight times in 36 years, was presented to Dr. Legge during the association's 36th annual meeting in Atlantic City, N. J., in April. As university physician Dr. Legge organized a students' health service and inaugurated a system of medical records that has long been a model. In 1930 he planned the Ernest V. Cowell Memorial Hospital. As lecturer in industrial medicine at the university's medical school, he established courses in industrial health. Dr. Legge organized the section on industrial medicine of the California State Medical Association and was its first chairman. He was one of the organizers and first presidents of the Western Association of Industrial Physicians and Surgeons and was first president of the Pacific Section of the American College Health Association. For 11 years he has been associate editor of *Industrial Medicine and Surgery*.

## CONNECTICUT

**Alcohol Clinic.**—A full-time outpatient service for diagnosis and treatment of alcoholism is in operation in Waterbury. Dr. Daniel O. Sayers is in charge of the clinic program and is assisted by a full-time mental hygienist, a consultant psychologist, and a secretary. It is anticipated that the clinic will become integrated in the total public health services of the community. Cooperation will be extended to all public and private agencies, to physicians, the clergy, personnel officers in industry, members of Alcoholics Anonymous, and to others who are called on to deal with the alcoholic.

**Diabetes Detection Report.**—More than 20,000 tests were conducted during the 1950 annual Diabetes Detection Drive sponsored by the Connecticut Diabetes Association in cooperation with the state medical society and the state department of health. The program produced more than 500 positive urine specimens, 251 of which concerned individuals not previously known to be diabetic. The number of tests represented an increase of 63 per cent over the 12,000 tests conducted in 1949. Private physicians conducted 2,917 tests; local health departments or testing stations, 10,534, and industrial medical departments, 2,095. The 1950 tests covered 1 per cent of the state population as compared to 0.6 per cent tested in 1949. Analysis of positive specimens by age groups indicates 12.1 per cent under 15 years, 13.7 per cent from 15 to 40 years, 19 per cent over 40 years, with age not stated in 55.2 per cent of the cases. Positives by sex disclose a higher percentage for women, 54.5 per cent, as compared to 45.5 per cent for men. The large increase in positive specimens among children under 15 years of age, from 2.5 per cent of the total positives in 1949 to 12.1 per cent in 1950, can be accounted for by the large number of school children tested in New Haven County during the 1950 drive.

Physicians are invited to send to this department items of news of general interest, for example, those relating to society activities, new hospitals, education and public health. Programs should be received at least three weeks before the date of meeting.

## ILLINOIS

**Society Election.**—The 1951-1952 officers of the Illinois Association of Medical Health Officers are: Drs. Leroy L. Fatherree, Joliet, president; Edward A. Piszcek, Chicago, vice president, and Herbert S. Ratner, Oak Park, secretary-treasurer. The association consists of full-time public health physicians.

**Personal.**—Kenneth J. Franklin, D.Sc., professor of physiology at the University of London, St. Bartholomew's Hospital Medical College, has been appointed visiting professor of physiology at the University of Illinois for the academic year beginning Sept. 1. His address will be: Department of Physiology, College of Natural Arts and Science, Urbana, Ill.

**Medical Assistants of Quincy.**—The Medical Secretaries and Assistants Club of Quincy, sponsored by the Adams County Medical Society and the Swanberg Medical Foundation of Quincy, was organized April 23. Its principal purpose is to promote educational programs adapted to the work of the members, to promote a closer relationship between members and their employers, and to further the relationship of the profession with the public and the patient. Membership is open to all women who have been employed by an Adams County physician, dentist, clinic, hospital, or health department. Those similarly employed in other counties of the Quincy territory may also join. Information may be obtained from the secretary, Miss Alice Rupert, 209-224 W. C. U. Building, Quincy.

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### Chicago

**Audiology Grants-In-Aid.**—The Audiology Foundation, to encourage and support adequate training of students, is offering again this year a limited number of grants-in-aid to students entering or already engaged in any branch of audiology, including otology, audiometry, speech, acoustics and education of the deaf or hard of hearing. These grants-in-aid will pay $500 per year and will be granted on the recommendation of professional teachers in audiology centers. For further information address the Audiology Foundation, 1104 S. Wabash Ave., Chicago 5.

**Subsidiary Scholarships.**—Four subsidiary scholarships of $10,000 each have been awarded to the Chicago Medical School this year by the David, Josephine and Winfield Baird Foundation, Inc., of New York. Another award of like amount has been given by Mrs. Sadye Arkin, Chicago, in memory of her husband, Harry J. Arkin. A subsidiary scholarship subsidizes the school for the difference between what a student pays in tuition and what the school must expend for his four years of training.

**Research Group Receives Award.**—The 1950 Commercial Solvents Award in antibiotics was presented to the terramycin research team of Charles Pfizer & Co., Inc., at the annual meeting of the Society of American Bacteriologists. The award consists of a gold medal and $1,000. The Pfizer group was selected for the discovery of the antibiotic, terramycin. The Commercial Solvents Award is administered by the Society of American Bacteriologists. It is awarded to any person or group of persons working in the Western Hemisphere who have contributed outstanding work in the field of antibiotics during the year.

**University Appointments.**—Dr. Herbert C. Batson, Washington, D. C., became professor of biostatistics at the University of Illinois College of Medicine on May 1. Dr. Batson will be concerned with work in biometrics and design of experiments.

He taught bacteriology and immunology at South Dakota State College from 1932 to 1940 and was associated with the bureau of laboratories, Michigan Department of Health, from 1940 to 1946.

Dr. Percival Bailey has been appointed director of the Illinois Neuropsychiatric Institute in Chicago. He will continue to serve in his joint position as distinguished professor of neurology and neurological surgery at the University of Illinois College of Medicine and as research consultant for the Illinois state mental hospitals. Dr. Bailey will also advise and assist state mental hospitals and institutions of the state department of public welfare in developing and carrying out research programs. The Illinois Neuropsychiatric Institute is a research and educational facility that is operated and maintained by the state department of public welfare. The medical staff is provided by the University of Illinois College of Medicine.

## INDIANA

**University Committee.**—In conformity with a resolution adopted by the general assembly, Gov. Henry F. Schricker has named a five-member committee to investigate the possibility of enlarging the Indiana University School of Medicine. Named as chairman was Dr. Merrill S. Davis, Marion, president of the medical school alumni organization; Mr. Virgil M. Simmons, Fort Wayne, publisher of the Fort Wayne *Journal Gazette;* Otto P. Kretzmann, D.D., Valparaiso, president of Valparaiso University; Mr. C. F. Eveleigh, Indianapolis, executive vice president of Eli Lilly & Co., and State Senator Leo J. Stemle, Jasper, an attorney. The committee will report to the 1953 session of the general assembly.

## MASSACHUSETTS

**Society Election.**—At the recent meeting of the Massachusetts Trudeau Society held at the Worcester County Sanatorium, Worcester, Dr. Francis P. Dawson Jr., Waltham, was re-elected president; Dr. John W. Strieder, Brookline, was re-elected vice president, and Dr. David S. Sherman, Boston, was re-elected secretary-treasurer.

**Course on Epilepsy.**—A course in the diagnosis and treatment of epilepsy and in electroencephalography is to be conducted at the seizure division of the Children's Medical Center, Boston, under a special grant from the Children's Bureau acting through the Massachusetts Department of Public Health. A limited number of physicians and prospective electroencephalographic technicians will be accepted. The first course begins July 1. Details may be secured from state or territorial health departments, or from Dr. William G. Lennox, 300 Longwood Ave., Boston, who will have general direction of the course.

## MICHIGAN

**Michigan Memorial Research Program.**—As a memorial to faculty and students who served during World War II, the University of Michigan has begun a research program in the development of peace-time use of atomic energy. Two years ago the university set up its Michigan Memorial-Phoenix Project and is now canvassing the alumni for funds for research. Means to alleviate malignant forms of high blood pressure without surgery will be sought in some of the 15 new investigations launched in May as a result of alumni gifts to the project. Expenditures for research thus far total $70,000. Many proposals are in the planning stage in anticipation of the 6½ million dollars the project contemplates spending within the next 10 years through various colleges of the university.

## MINNESOTA

**Probation for Abortionist.**—On April 6 Helen A. Heck, 809 Iglehart Ave., St. Paul, was placed on probation by Judge Gustavus Loevinger in the District Court of Ramsey County. The probation is to cover a maximum period of eight years and follows a plea of guilty on Sept. 19, 1950, by the defendant to an information charging her with the crime of abortion and a prior conviction in 1947 for a similar offense. The defendant served six months in the Ramsey County jail prior to April 6 in connection with the present case. She has no license to practice any form of healing.

## NEW JERSEY

**Blood-Typing Program for College Women.**—As a result of a blood-typing program carried on at New Jersey College for Women, Rutgers University, New Brunswick, seniors leaving the campus this month will carry identification cards stating their blood type and Rh factor. Forty-five girls from the advanced physiology and bacteriology classes at the college blood-typed more than 300 students and faculty members during May. The project, under the direction of Hazel B. Gillespie, Ph.D., associate professor of bacteriology, and Marion A. Reid, Ph.D., assistant professor of zoology, is part of the New Jersey College for Women civil defense program.

## NEW YORK

**Dr. Curphey Appointed Consultant.**—Dr. Theodore J. Curphey, Garden City, chairman of the council committee of public health and education of the Medical Society of the State of New York, has been appointed a special consultant in clinical pathology to the Surgeon General of the U. S. Public Health Service. His post will be with the laboratory branch of the communicable disease center, Bureau of State Services.

**Postgraduate Lecture.**—On June 18 Dr. John L. Pool, assistant professor of clinical surgery at Cornell University Medical College, will deliver a postgraduate lecture for the Geneva Academy of Medicine in the Belhurst Restaurant, Geneva, at 8:30 p. m. on "Trends in Thoracic Surgery of Neoplastic Diseases." This lecture has been arranged by the Medical Society of the State of New York in cooperation with the New York State Department of Health.

**Wadsworth Lecture.**—The second Augustus B. Wadsworth lecture was given in Albany on May 16 by Dr. Francis G. Blake, Sterling professor of medicine, Yale University School of Medicine, New Haven, Conn., on antibiotic therapy with particular reference to chloramphenicol, aureomycin, and terramycin. The lectureship was established in 1950 by the staff of the division of laboratories and research of the New York State Department of Health and the council of the New York State Association of Public Health Laboratories. Dr. Wadsworth retired as director of the division of laboratories and research in 1945 after 31 years' continuous service.

**Personals.**—Dr. Temple Fay, professor of neurosurgery at the Woman's Medical College of Pennsylvania, has been appointed consultant to the Albany Hospital cerebral palsy treatment center.——Dr. Samuel W. Hamilton, Cedar Grove, N. J., addressed members of the Long Island Psychiatric Society and members of the Veterans Administration Hospital, Northport, L. I., May 15 on "The Ward Physician."——Mr. William Vogt, author of "Road to Survival" and former chief of the conservation section of the Pan-American Union, has been appointed national director of the Planned Parenthood Federation of America. He returned from Scandinavia in February on the completion of a population study made under combined Guggenheim and Fulbright fellowships.

### New York City

**Memorial to Doctor Bohrer.**—A fully equipped and modern operating room has been installed in Knickerbocker Hospital as a memorial to the late Dr. John V. Bohrer, who was associated with the hospital for 15 years and was chief of the surgical service for six years prior to his death. Funds for the equipment of the new operating room were donated by physicians and surgeons now on the hospital's staff and by friends and associates.

**Dr. Dubos Wins Trudeau Medal.**—Rene J. Dubos, Ph.D., of New York, a member of the Rockefeller Institute for Medical Research, department of pathology and bacteriology, has received the Trudeau Medal of the National Tuberculosis Association. The award for "the most meritorious contribution on the cause, prevention, or treatment of tuberculosis" was presented by Dr. Esmond R. Long, director of medical research, in behalf of Dr. Florence R. Sabin, Denver, formerly with the Rockefeller Institute, who was chairman of the award committee. In the citation attention was called to Dr. Dubos' work in

devising a method of culturing tubercle bacilli that promotes their growth throughout the medium, contrary to their habit of clumping together near the surface, and also speeds the growth of the germs. The great advantage of the technique, according to the citation, is to "open the long road to the study of the chemical nature of virulence in tubercle bacilli and broaden the foundation for the study of immunology of tuberculosis." A native of France, Dr. Dubos in 1927 became a fellow of the Rockefeller Institute. He is a member of the committee of medical research of the American Trudeau Society and vice president of the Society of American Bacteriologists.

**Yeshiva University Medical Education Council.**—An 11-man council of medical education has been formed to guide the development of the projected medical school at Yeshiva University. Dr. Harry M. Zimmerman, professor of pathology at Columbia University College of Physicians and Surgeons, has been elected chairman. Dr. Donald G. Anderson, Chicago, Secretary, American Medical Association's Council on Medical Education and Hospitals, and Dr. John B. Pastore, assistant professor of clinical obstetrics and gynecology at Cornell University Medical College, will serve as consultants. The projected medical center will contain schools of medicine, dentistry, nursing, public health, and postgraduate divisions. Members of the council include: Dr. Bernard J. Alpers, Philadelphia, professor of neurology at Jefferson Medical College; Dr. Leo Davidoff, clinical professor of neurosurgery at New York University College of Medicine; Dayton J. Edwards, Ph.D., professor emeritus of physiology at Cornell University Medical College; Dr. Harry H. Gordon, professor of pediatrics at the University of Colorado School of Medicine, Denver; Dr. Horace L. Hodes, clinical professor of pediatrics, Columbia University; Dr. Marcus Kogel, city commissioner of hospitals; Dr. Louis H. Nahum, professor of physiology at the Yale University School of Medicine, New Haven, Conn.; Dr. Isadore Snapper, director of medical education at Mt. Sinai Hospital; Dr. Abraham White, vice-president and director of research, Chemical Specialties Company, Inc.; Dr. Maxwell M. Wintrobe, professor of internal medicine at the University of Utah Medical School, Salt Lake City, and Dr. Harry M. Zimmerman, professor of pathology at Columbia University. In 1950 New York State's board of regents amended the charter of Yeshiva University, founded in 1897 as a theological seminary, empowering it to open a medical and dental school.

## SOUTH DAKOTA

**Dean Slaughter Named Consultant.**—Dr. Donald H. Slaughter, dean of the University of South Dakota School of Medical Sciences, Vermillion, has been appointed consultant to the postgraduate Army Medical School in Washington, D. C. Dr. Slaughter lectured to students at the school in May and June on "The Philosophy of Medical History."

## TENNESSEE

**Visiting Professors.**—Five visiting professors will join the faculty of the University of Tennessee Medical Units for the summer quarter beginning July 9. Frederic R. Steggerda, Ph.D., who served as an instructor in the division of physiology from 1929 to 1933, will return as a visiting professor of physiology. Dr. Steggerda is now a professor at the University of Illinois, Urbana. Four other professors joining the staff of the division of anatomy are: James H. Leathem, Ph.D., New Brunswick, N. J.; G. Gordon Robertson, Ph.D., Dallas, Texas; Robert L. Bacon, Ph.D., and Dr. Donald L. Stilwell, San Francisco.

## TEXAS

**Guest Lecturers Organization.**—The department of radiology of the University of Texas Medical Branch, Galveston, under the direction of Dr. Joe C. Rude, has developed a guest lecturers organization. Dr. Walter J. Stork, Houston, is chairman; Dr. Carroll F. Crain, Alice, is vice chairman, and Dr. Rude is acting as temporary secretary. The organization includes 37 radiologists from Texas, Oklahoma, and Louisiana. The object of the group is to promote interest of Southwest physicians in radiology and to support the highest possible standards for radiological work in the Southwest.

## UTAH

**Personals.**—At a recent meeting of the American Board of Anesthesiology Dr. Scott M. Smith of Salt Lake City was elected a director of the board.——Dr. George M. Fister, Ogden, was among the 17 distinguished University of Chicago alumni to be awarded a citation of merit at the alumni assembly in Chicago June 9.

**State Board of Health.**—Dr. James Z. Davis, Salt Lake City health commissioner, has succeeded Dr. Thomas J. Howells as chairman of the state board of health. Dr. Davis has served on the board for the past two years. The retiring chairman has been a member of the board for 18 years and has also served twice as acting state health commissioner.

## WEST VIRGINIA

**Lay Diabetes Society.**—The first meeting of the new Kanawha Diabetic Lay Society was held at the YWCA in Charleston the middle of March. Throughout the state similar lay societies are being formed that will ultimately amalgamate with the West Virginia Diabetes Association.

**Grants for Heart Research.**—A grant of $3,000 for research in heart disease has been awarded the school of medicine at West Virginia University, Morgantown, by the board of directors of the West Virginia Heart Association. The board has also granted a fellowship award of $2,500 to the American Heart Association with the stipulation that citizens of West Virginia be given preference in using the proceeds of the award. It has been announced that a total of more than $25,000 was collected in the state during the 1951 Heart Fund Drive, an increase of $6,000 over 1950.

**Obstetricians and Gynecologists Organize.**—Obstetricians and gynecologists in the Charleston area have organized under the name of "The Obstetrical and Gynecological Society of Charleston, West Virginia." Dr. Leo M. Seltzer is president, Dr. George L. Grubb, vice president, and Dr. Frederick H. Dobbs, secretary. Meetings will be held in the library of the West Virginia State Medical Association on the second Thursday in each month from October through May. The objects of the society are to create better understanding between doctors practicing obstetrics and gynecology, to disseminate information concerning new and modern concepts relative to this field, and to enable members to write and discuss papers of interest to the society.

## WISCONSIN

**Bardeen Memorial Lectureship.**—Dr. Charles Huggins, professor of surgery, University of Chicago Medical School, delivered the Bardeen Memorial Lectureship of Phi Chi at the University of Wisconsin Medical School May 10.

**Surgeons Meeting.**—The Wisconsin section of the U. S. chapter of the International College of Surgeons met June 2 in Marshfield. Featured was an operative surgical clinic. Six papers were presented in the afternoon, and Dr. Arnold S. Jackson, Madison, reported on the meeting of the international college in Florence, Italy. At the evening session Dr. Durand Smith, Chicago, spoke on radiation injury to the bowel, and Dr. William M. McMillan, Chicago, on pitfalls and safeguards in surgery of the colon.

## HAWAII

**Medical Association Election.**—At the recent annual meeting of the Hawaii Territorial Medical Association Dr. Harry L. Arnold Jr., Honolulu, was installed as president. Others elected include Dr. Ransom J. McArthur, Wailuku, president-elect; Dr. Irvin L. Tilden, Honolulu, secretary, and Dr. Edwin K. Chung-Hoon, Honolulu, treasurer. The secretary and treasurer are elected for three years. Dr. Tilden and Dr. Chung-Hoon are now serving the last year of their terms.

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## GENERAL

**New Executive Director for National Foundation.**—Mr. Raymond H. Barrows, San Francisco, vice president and manager of the Pacific Area of the American Red Cross, became executive director of the National Foundation for Infantile Paralysis June 1. Mr. Barrows succeeds Mr. Joe W. Savage, executive director since January, 1946. Mr. Barrows joined the Red Cross as assistant director of disaster relief in the Midwestern Area Office at St. Louis in July, 1941, and became director of that service before he was transferred to the Pacific Area office.

**Alumni to Finance Medical School History.**—A project to bring up to date the history of the Long Island College of Medicine has been undertaken by the alumni association of the college. To finance the project the association is asking for a prepublication sale of copies at $10 each. This second volume is to cover the years 1900 through 1950 and will contain a complete biographical sketch of each graduate. It is to contain about 325 pages and will be completed in 12 to 18 months. Checks payable to the treasurer of the alumni association of the Long Island College of Medicine should be sent to 350 Henry St., Brooklyn 2.

**Southern Anesthesiologists Meet.**—The Southern Society of Anesthesiologists at their annual meeting in Louisville in April chose Dr. Ralph M. S. Barrett, St. Louis, president-elect; Dr. John Adriani, New Orleans, vice president; Dr. David A. Davis, Augusta, Ga., secretary-treasurer. Dr. Donald Stubbs, Washington, D. C., is the new president. Among the speakers on the program were: Dr. David M. Little Jr., New Haven, Conn.; Dr. Charles R. Stephen, Durham, N. C., and Drs. Charles R. Allen and Harvey C. Slocum of Galveston, Texas. Dr. Fred Williams, Louisville, president of the society, presided at the business session.

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**Report on Research on Hypertension.**—The American Foundation for High Blood Pressure has recently published "Research Progress Report," which lists 19 research projects in the field of hypertension and arteriosclerosis that were supported by the foundation in 1949 and 1950 at a total outlay of $112,522. The American Foundation for High Blood Pressure on Jan. 1, 1950, joined with the American Heart Association and then became its Council for High Blood Pressure Research. In this new affiliation the council continues to operate as did the foundation. The administrative office address of the council is 705 Marion Building, Cleveland 13. Dr. Alva Bradley is president.

**Award in Orthopedic Surgery.**—A prize of $1,000 donated by the Kappa Delta sorority may be awarded annually by the American Academy of Orthopaedic Surgeons for the best research related to orthopedic surgery and performed in the United States. This research must be presented to the committee on scientific investigation of the American Academy of Orthopaedic Surgeons before Nov. 1. Researchers interested in competing for this prize are requested to secure further information from Dr. Austin T. Moore, Gervais and Pickens Sts., Columbia 5, S. C., chairman of the award committee for 1951.

**American Neurological Association.**—The American Neurological Association will hold its annual meeting June 18-20 at the Hotel Claridge, Atlantic City, N. J., under the presidency of Dr. Wilder G. Penfield, Montreal, Canada. The program will open with a symposium in which the speakers will be:

Gerhardt Von Bonin, Chicago, Phylogenesis of the Human Cerebral Cortex.
Horace W. Magoun, Los Angeles, An Activating System in the Brain Stem.
Herbert H. Jasper, Mr. Cosimo Ajmone Marsan, Julius Stoll Jr., Montreal, Cortifugal Projections to the Brain Stem.
Stanley Cobb, Boston, On the Nature and Locus of Mind.
Wilder G. Penfield, Montreal, Human Memory Mechanisms.

**Tele-Clinics.**—Wyeth, Inc., Philadelphia, has undertaken a motion picture educational program to bring to medical personnel who are unable to attend distant professional meetings abstracts of scientific papers presented at such meetings and views of highlights of these assemblies. Tele-Clinic No. 2 was a sound motion picture report of the annual meeting of the American Academy of General Practice in San Francisco in March. The preview presentation was held at the Palmer House, Chicago, May 26 on invitation of the American Academy of General Practice. This production is a 35-minute, 16 mm. black-and-white sound film of which 55 prints will be made available to medical societies, hospitals, nurses groups, and other medical organizations. Tele-Clinic No. 1, released last November, featured the proceedings of the fourth general assembly of the World Medical Association held in New York and has been seen by more than 30,000 doctors throughout the United States.

**National Medical Council Formed.**—This council was formed in New Haven, Conn., April 20 to work with the Yale Center of Alcoholic Studies on rehabilitation of the problem drinkers in industry, estimated to exceed 2 million. Dr. John J. Wittmer,* assistant vice president of the Consolidated Edison Company of New York, Inc., was named chairman of the council. The impact of alcoholism on manpower during national mobilization was the factor prompting the formation of the group. Selden D. Bacon, director of the Yale center, said the council had been approved by the medical heads of leading business and industrial concerns including E. I. du Pont de Nemours & Co., Esso Standard Oil Company, General Motors Corporation, R. H. Macy, Metropolitan Life Insurance Company, and the National Broadcasting Company, Inc.

**Plastic Surgery Awards.**—The foundation of the American Society of Plastic and Reconstructive Surgery offers junior and senior awards for original contributions in plastic surgery. The junior award is two scholarships in plastic surgery of six and three months respectively. The contest is open to plastic surgeons who have been in the specialty no longer than five years. The senior award will be given for the best essay on "Mass Treatment of Burns in Atomic Warfare." Winning essays will appear on the program of the forthcoming annual meeting of the society to be held at Colorado Springs, Colo., Oct. 31-Nov. 2. Entries must be received by the chairman not later than Aug. 15. For information address the Award Committee, % Jacques W. Maliniac, M.D., 11 East 68th St., New York 21.

**Research in Blood Diseases.**—The Hematology Research Foundation invites applications for the Ruth Reader Fellowship and the Robert L. Goldblatt Fellowship for research in blood diseases in the academic year 1951-1952. The stipend for each fellowship is $1,500 per year with option to renew. This offer is made to workers of any race or creed in the United States. Applications must be submitted no later than July 15 to Hematology Research Foundation, 72 E. 11th St., Chicago 5. Nine copies of the application are requested. Forms are available on request. Awards will be announced by the medical advisory council in July or August this year. The council will choose the applicants on the basis of merit and will also choose the institution in Chicago in which the work is to be done.

**World Health Organization Fellowships.**—More than 250 fellowships for advanced study will be awarded this year by the World Health Organization to medical and allied personnel throughout the world. Technical and teaching personnel from WHO member states with at least two years of experience in the field in which the fellowship is sought are eligible for the awards. Applications are made to WHO through the applicant's government. The World Health Organization has already awarded about 800 fellowships in fields including public health administration, communicable diseases, nursing, maternal and child health, internal medicine and surgery. The Pan American Sanitary Bureau, regional office of WHO, awards from its own budget additional fellowships for public health trainees in the Americas. During the past year the bureau granted some 35 fellowships for studies extending from several weeks to a full academic year. This is in addition to the financing by the bureau during 1950 of shorter-term training courses for more than 80 men and women in serological laboratories and a public health nursing workshop.

**School of Tuberculosis.**—The 37th session of the Trudeau School of Tuberculosis was held at Saranac Lake, N. Y., April 30-May 25. This school has been supported since 1939 by the Lillia Babbitt Hyde Foundation and is intended for physicians

* Dr. Wittmer died May 19.

who wish to prepare themselves for sanatorium or public health service or those who desire a postgraduate course in diseases of the lungs. The program presents the essentials of history, etiology, epidemiology, pathology, diagnosis, prognosis, and treatment. In addition to daily discussions, classes, and clinics, there were evening lectures by Dr. Honore Smith of Oxford, England, on the "Treatment of Tuberculosis Meningitis"; by Dr. Herman E. Hilleboe, New York State Health Commissioner, on "World Problems in Tuberculosis"; by Dr. Maurice Costello, clinical professor of dermatology and syphiloiogy, New York University College of Medicine, on "Tuberculosis of the Skin"; by Dr. Averill A. Liebow, associate professor of pathology, Yale University College of Medicine, on "Aspects of the Pulmonary Circulation in Disease," and by Dr. Frank R. Ferlaino, medical director, General Motors Corporation, New York, on "Tuberculosis as it Occurs in Industrial Workers."

**Predoctoral Fellowships.**—The National Foundation for Infantile Paralysis has announced a new type of short-term predoctoral fellowships for undergraduate medical students interested in research in medicine and the related biological and physical sciences. The fellowships cover a minimum of two months' experience in research under the direction of a competent investigator in the laboratories of approved medical schools or research institutes in the United States. Under the plan the dean of each four-year medical school has the privilege of nominating one medical student to receive a fellowship. The National Foundation for Infantile Paralysis will provide a stipend of $400 for each student who qualifies for the summer laboratory study. The new fellowships are administered by the division of professional education with the assistance of a professional committee headed by Dr. Thomas B. Turner, professor of bacteriology at the School of Hygiene and Public Health of Johns Hopkins University School of Medicine, Baltimore. The purpose of the new short-term fellowships is to enable medical students to test their desires and determine their aptitudes to participate in research in medicine and related biological sciences at an early stage in their professional careers.

**Child Mortality Rates.**—Conquest of disease has reduced the mortality at ages 1 to 14 by three fourths since 1930. This is based on the experience among children insured with the Metropolitan Life Insurance Company. The death rate among boys of the insured group dropped from 275.8 per 100,000 in 1930 to 74.7 in 1950 and among the girls from 228.4 per 100,000 to 53.9. At the preschool ages the improvement over the two decades was about four fifths, and the 1950 preschool death rate from all causes combined was lower than the rate from pneumonia alone in 1930. The mortality from the principal communicable diseases of childhood, measles, scarlet fever, whooping cough and diphtheria, fell more than 95 per cent, and the downward trend of the death rate from diarrhea and enteritis was almost as rapid. Reductions of not less than 75 per cent at any of the age periods were recorded for pneumonia, tuberculosis and rheumatic fever. With these shifts in the mortality picture, accidents now constitute the foremost cause of death at every age group for both boys and girls and at 1 to 4 years account for about one death in every three among boys and nearly one in five among girls. A pronounced rise in the recorded mortality from cancer among children has made it now a leading cause of death.

**Society Elections.**—At the annual meeting of the New Orleans Graduate Medical Assembly March 5-8 Dr. Edgar Hull, New Orleans, was installed as president. Other officers elected for this year include: Dr. Charles B. Odom, New Orleans, president-elect; Dr. Woodard D. Beacham, New Orleans, secretary, and Dr. Robert F. Sharp, New Orleans, treasurer. The 1952 meeting will be held March 10-13, with headquarters at the municipal auditorium.——New officers of the American Psychiatric Association elected during the 107th annual meeting of the association in Cincinnati May 7-11 include: Dr. Leo H. Bartemeier, Detroit, president; Dr. D. Ewen Cameron, Montreal, Canada, president-elect; Dr. R. Finley Gayle Jr., Richmond, Va., secretary, and Dr. Howard W. Potter, Brooklyn, treasurer. ——The American Academy of General Practice at its March meeting in San Francisco installed Dr. Joseph P. Sanders, Shreveport, La., as president and chose Dr. R. B. Robins, Camden, Ark., as president-elect; Dr. Fred A. Humphrey, Fort Collins, Colo., vice president, and Dr. Jack S. DeTar, Milan, Mich., speaker of the house of delegates. The 1952 scientific assembly will be held in Atlantic City, N. J., March 24-27.—— At the annual meeting of the American Institute of Nutrition in Cleveland April 29-May 3 the following officers were elected: Clive M. McCay, Ph.D., New York, president; Paul L. Day, Ph.D., Little Rock, Ark., vice president, and James M. Orten, Ph.D., Detroit, secretary.——The American Otological Society at its meeting at the Hotel Claridge, Atlantic City, N. J., May 11-12 elected the following officers: Dr. Gordon D. Hoople, Syracuse, N. Y., president; Dr. Albert C. Furstenberg, Ann Arbor, Mich., vice president, and Dr. John R. Lindsay, Chicago, secretary-treasurer.——The American Society for Pharmacology and Experimental Therapeutics at its annual meeting in Cleveland April 29-May 3 elected the following officers: Dr. McKeen Cattell, New York, president; Dr. K. K. Chen, Indianapolis, president-elect; Dr. Carl C. Pfeiffer, Chicago, secretary, and Dr. Robert P. Walton, Charleston, S. C., treasurer.

## FOREIGN

**Anti-Tuberculosis Center Opened in Istanbul.**—A new building constructed by the Turkish government to house the World Health Organization Anti-Tuberculosis Center was opened last winter in Istanbul in the presence of the Turkish minister of health, the governor of Istanbul, and representatives of the diplomatic corps. The center had been operating in temporary premises since its foundation last June. The center's primary function is to train medical and health workers in modern antituberculosis methods and to create a unified organization against the disease that would serve as a model for similar services elsewhere. The WHO staff in Istanbul, consisting of a French tuberculosis specialist, an English x-ray technician, and a French nurse, has in eight months given advanced instruction to nearly 300 Turkish doctors and nurses. The new building, which contains five floors and cost $130,000, includes sections for radiography, tuberculin-testing, and BCG-vaccination.

**Penicillin Factory in India.**—The government of India has announced its decision to accept United Nations assistance in setting up a penicillin factory at an estimated cost of 20 million rupees (4 million dollars). The World Health Organization, as requested by the government of India, will make available technical assistance and training facilities for Indian personnel to an extent of $350,000. The United Nations International Children's Emergency Fund will pay for imported production equipment costing $850,000. The government of India will retain full control over the erection, operation, and maintenance of the factory and its staff and will make available to Indian women and children free supplies of penicillin to the total value of $850,000. It is estimated that a minimum production of 400,000 mega units per month will be reached at the end of two years, rising ultimately to 700,000 mega units.

## DEATHS IN OTHER COUNTRIES

**Maj. Gen. Sir Percy Tomlinson,** who was the medical officer responsible for building up the medical organization of the Middle East Command during World War II, died in Hove, England, March 6, aged 66. He became honorary physician to the King and was elected a fellow of the Royal College of Physicians.——**Professor Martin Mayer** passed away suddenly on Feb. 17 at Caracas, Venezuela, aged 76. For many years he was head of the bacteriological section of the Institut für Schiffs- und Tropenkrankheiten, Hamburg, until he was forced to leave Germany and found refuge at the Universidad Central in Caracas.

## CORRECTION

**The Heredity of Epilepsy.**—In the article by Dr. William G. Lennox on the heredity of epilepsy in THE JOURNAL, June 9, 1951, page 536, in line 12, left-hand column, 7.6 per cent should read 6.4.

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## MEETINGS

AMERICAN ELECTROENCEPHALOGRAPHIC SOCIETY, Hotel Claridge, Atlantic City, June 16-17. Dr. John A. Abbott, Massachusetts General Hospital, Boston 14, Secretary.

AMERICAN HEARING SOCIETY, Palmer House, Chicago, June 29. Mrs. Frances E. Lee, 817 Fourteenth St. N.W., Washington 5, D. C., Secretary.

AMERICAN NEUROLOGICAL ASSOCIATION, Atlantic City, June 18-20. Dr. H. Houston Merritt, 710 W. 168th St., New York 32, Secretary.

AMERICAN ORTHOPEDIC ASSOCIATION, The Greenbrier, White Sulphur Springs, W. Va., June 20-23. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

GREAT FALLS MEDICAL-SURGICAL CONFERENCE, Great Falls, Montana, June 25-26. Dr. William E. Sullens, Box 1066, Great Falls, Chairman.

IDAHO STATE MEDICAL ASSOCIATION, Sun Valley, June 17-20. Dr. Robert S. McKean, 305 Sun Building, Boise, Secretary.

MAINE MEDICAL ASSOCIATION, Poland Spring House, Poland Spring, June 17-19, Dr. Frederick R. Carter, 142 High St., Portland 3, Secretary.

MEDICAL LIBRARY ASSOCIATION, Denver, June 28-30. Miss Caroline Riechers, Rush Medical College Library, 1758 W. Harrison St., Chicago 12, Secretary.

POST GRADUATE MEDICAL ASSEMBLY OF SOUTH TEXAS, Shamrock Hotel, Houston, Texas, July 23-25. Mrs. W. H. Dahme, 229 Medical Arts Bldg., Houston, Executive Secretary.

SOCIETY OF BIOLOGICAL PSYCHIATRY, Claridge Hotel, Atlantic City, June 17. Dr. George N. Thompson. 1136 W. Sixth St., Los Angeles 17, Secretary.

WEST VIRGINIA STATE MEDICAL ASSOCIATION, The Greenbrier, White Sulphur Springs, July 19-21. Mr. Charles Lively, 1031 Quarrier St., Charleston 24, Executive Secretary.

### INTERNATIONAL

EUROPEAN CONGRESS ON RHEUMATISM, Barcelona, Spain, Sept. 24-27. Dr. Gunnar Edström, Lund, Sweden, Secretary.

GENERAL PRACTITIONERS STUDY CLUB INTERNATIONAL, Rome, Italy, Sept. 12-15. Dr. John O'Connell, 10300 Lackland Road, St. Louis 14, Mo., U. S. A., President.

INTERNATIONAL ANESTHESIA RESEARCH SOCIETY, London, England, Sept. 3-7. Mr. R. W. Cope, University College Hospital, London W.C.1, England.

INTERNATIONAL ASSOCIATION OF ALLERGISTS, Zurich, Switzerland, Sept. 23-29. Prof. A. S. Grumbach, Hygiene Institut der Universitaet Zurich, Gloriastr. 32, Zurich, Switzerland.

INTERNATIONAL CONGRESS OF ANESTHESIOLOGY, Nursing School of the Salpiettre, 47 Boul de l'Hospital, Paris, France, Sept 20-22, 12 rue de Seine, Paris 6e, France, Secretariat.

INTERNATIONAL CONGRESS OF CLINICAL PATHOLOGY, London, England, July 16-20. Dr. W. H. McMenemey, Maida Vale Hospital for Nervous Diseases, London W.9, England, Secretary.

INTERNATIONAL CONGRESS OF GYNECOLOGY, Maison de la Chimie, Centre Marcellin, Paris, France, June 23-29. Dr. Maurice Fabre, 1, rue Jules-Lefebvre, Paris 9, General Secretary.

INTERNATIONAL CONGRESS ON INDUSTRIAL MEDICINE, Instituto Superior Técnico, Lisbon, Portugal, Sept. 9-15. Dr. Luis Guerreiro, Instituto Nacional do Trabalho e Previdência, Praça do Comercio, Lisbon, Secretary General.

INTERNATIONAL CONGRESS ON MENTAL HEALTH, Mexico City, Mexico, Dec. 11-19.

INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY, Paris, France, June 17-23. Physician General Dutrey, 8, bis, rue de Recollets, Paris 10, Secretary General.

INTERNATIONAL GERONTOLOGICAL CONGRESS, Hotel Jefferson, St. Louis, Mo., U. S. A., Sept. 9-14. Dr. John E. Kirk, 5600 Arsenal Street, St. Louis 9, Mo., Chairman, Program Committee.

INTERNATIONAL HOSPITAL CONGRESS, Brussels, Belgium, July 15-21. Capt. J. E. Stone, 10 Old Jewry, London E.C., England, Secretary.

INTERNATIONAL POLIOMYELITIS CONGRESS, Copenhagen, Denmark, Sept. 3-7. Prof. Dr. Niels Bohr, Statens Seruminstitut, 80 Amager Blvd., Copenhagen S., Denmark, President.

INTERNATIONAL SOCIETY OF SURGERY, Paris, France, Sept. 24-29. Dr. L. Dejardin, 141, rue Belliard, Brussels, Belgium, Secretary General.

INTERNATIONAL SOCIETY FOR THE WELFARE OF CRIPPLES, Fifth World Congress, Stockholm, Sweden, Sept. 9-14. Mr. Donald V. Wilson, 54 E. 64th St., New York 21, N. Y., U. S. A., Executive Director.

PAN PACIFIC SURGICAL ASSOCIATION CONGRESS, Honolulu, Hawaii, Nov. 7-19. Dr. Forrest J. Pinkerton, Suite 7, Young Bldg., Honolulu, Hawaii, President.

STUDENTS' INTERNATIONAL CLINICAL CONGRESS, Leyden, Utrecht, Groningen and Amsterdam, Holland, July 10-28. N. A. M. Bergstein, Oude Gracht 143 bis, Utrecht, Holland, Secretary General.

WORLD CONFEDERATION FOR PHYSICIAL THERAPY, Copenhagen, Denmark, Sept. 7-8.

WORLD MEDICAL ASSOCIATION, Stockholm, Sweden, Sept. 15-21. Dr. Louis H. Bauer, 2 E. 103d St., New York 29, N. Y., U. S. A., Secretary-General.

## EXAMINATIONS AND LICENSURE

### NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II*. Various Centers. June 18-20, Sept. 5-7 (Part I only). Applications must be filed at least thirty days prior to an examination. Ex. Sec., Mr. E. S. Elwood, 225 S. 15th Street, Philadelphia.

### INTERNATIONAL COLLEGE OF SURGEONS

Examinations for Certified Fellowship in the United States Chapter in General and Orthopedic Surgery, Chicago, Aug. 3-4. Sec., Dr. Arnold S. Jackson, 1516 Lake Shore Drive, Chicago 10.

### EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Written*. July 20. Given simultaneously in several cities in the United States. Final date for filing application was Jan. 20. *Oral*. Memphis, Oct. 14-17. *Written*. July 18, 1952, Various locations. Final date for filing applications is Jan. 18, 1952. Sec., Dr. Curtiss B. Hickcox, 80 Seymour St., Hartford 15, Conn.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written*. Various centers, Oct. 15. Final date for filing applications was May 1. *Oral*. The schedule of oral examinations for 1951 has been arranged on a regional basis as follows: June, includes candidates from Beirut, Canada, Canal Zone, Connecticut, Delaware, District of Columbia, Maryland, New Jersey, Ohio, Pennsylvania, Puerto Rico, Rhode Island, Virginia and West Virginia. New York, date to be announced, covering Maine, Massachusetts, New Hampshire, New York and Vermont. San Francisco, date to be announced, covering Arizona, California, Colorado, Idaho, Montana, New Mexico, Oregon, Utah and Washington.
Only candidates who have not taken an oral examination can be admitted under the schedule arranged thus far.
Dates of closing dates for the filing of applications for examinations in New York and San Francisco to be announced.
Oral examinations in the subspecialties will be held at the same time and place and on the same distribution.
Exec. Sec., Dr. William A. Werrell, 1 West Main Street, Madison 3.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral*. Chicago, Oct. 25-26. *Oral*. Chicago, May 1952. Final date for filing applications for the May 1952 examination is Jan. 1, 1952. Sec., Dr. W. J. German, 789 Howard Ave., New Haven 4, Conn.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Written*. Feb. 1, 1952. Final date for filing applications is Nov 1. Sec., Dr. Paul Titus, 1015 Highland Building, Pittsburgh 6, Pa.

AMERICAN BOARD OF OPHTHALMOLOGY: *Written*. Twenty-five centers, Feb. 4-5, 1952. *Oral*. Chicago, October 8-13. Sec., Dr. Edwin B. Dunphy, 56 Ivie Road, Cape Cottage, Maine.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Final date for filing applications for the 1952 Part II examinations is Aug. 15, 1951. Sec., Dr. Harry A. Sofield, 122 S. Michigan Ave., Chicago 3.

AMERICAN BOARD OF OTOLARYNGOLOGY: *Oral*. Chicago, Oct. 9-12. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City.

AMERICAN BOARD OF PEDIATRICS: *Oral*. Detroit, June 8-10, Buffalo, Oct. 26-28. Ex. Sec., Dr. John McK. Mitchell, 6 Cushman Road, Rosemont, Pa.

AMERICAN BOARD OF PREVENTIVE MEDICINE: *Written*. San Francisco, October 28. *Oral*. San Francisco, October 29. Sec., Dr. Ernest L. Stebbins, 615 North Wolfe St., Baltimore 5.

AMERICAN BOARD OF RADIOLOGY: *Oral*. Washington, D. C., Sept. 17-22. Sec., Dr. B. R. Kirklin, 102-110 Second Ave., S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written*. Various centers, Oct. 1951. Final date for filing applications is July 1. Sec., Dr. J. Stewart Rodman, 225 South 15th Street, Philadelphia.

BOARD OF THROACIC SURGERY: *Written*. Various parts of the country. Sept. 14, 1951. Final date for filing applications is July 15. Sec., Dr. William M. Tuttle, 1151 Taylor Ave., Detroit 2, Mich.

AMERICAN BOARD OF UROLOGY: Chicago, Feb. 9-13, 1952. Final date for filing applications is Sept. 1. Sec., Dr. Harry Culver, 314 Corn Exchange Bldg., Minneapolis 15.

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# DEATHS

**Leslie, Frank Elliott** ✠ St. Petersburg, Fla.; born in Woburn, Mass., July 21, 1873; Medical School of Maine, Portland, 1901; commissioned a first lieutenant in the medical corps of the U. S. Army in July, 1917; promoted to captain in October of that year and to major in February, 1918; in September, 1919, was commissioned a surgeon in the U. S. Public Health Service and made senior surgeon in February, 1920; at the time of his retirement in 1943 was manager of the Veterans Administration Memorial Hospital at Mendota, Wis., a position he had held since 1939; specialist certified by the American Board of Psychiatry and Neurology; member of the Maine Medical Association, American Psychiatric Association, National Committee for Mental Hygiene, and the Association of Military Surgeons of the United States; from 1905 to 1917 superintendent of Glenellis Sanitarium in Andover, Maine, where in 1911 he was president of the Oxford County Medical Society; died in the Veterans Administration Center, Bay Pines, March 27, aged 77, of portal cirrhosis and primary carcinoma of the liver.

**McClure, Roy Donaldson** ✠ Detroit; born in Bellbrook, Ohio, Jan. 17, 1882; Johns Hopkins University School of Medicine, Baltimore, 1908; assistant in surgery from 1912 to 1914 and instructor in surgery from 1914 to 1916 at his alma mater; specialist certified by the American Board of Surgery; founded and was the first president of the Central Surgical Association; past president of the Detroit Academy of Surgery; fellow of the American Surgical Association, Southern Surgical Association, and the American College of Surgeons, of which he had been a governor; served in the army during World War I as head of an evacuation hospital in France and during World War II as a member of the National Research Council and chairman of the Michigan Medical Advisory Board; creator and first chief of the department of surgery, Henry Ford Hospital; consulting surgeon, Charles Godwin Jennings Hospital; died March 31, aged 69, of arteriosclerotic heart disease.

**Crossen, Harry Sturgeon** ✠ St. Louis; born in Centerville, Iowa, Feb. 2, 1869; Washington University School of Medicine, St. Louis, 1892; since 1935 professor emeritus of clinical obstetrics and gynecology at his alma mater, where he was instructor in gynecology from 1901 to 1921, when he became professor of clinical gynecology; member of the American Gynecological Society and the Central Association of Obstetricians and Gynecologists; fellow of the American College of Surgeons; served in France during World War I; affiliated with Barnes, St. Luke's and St. Louis Maternity hospitals; superintendent and surgeon in charge, St. Louis Female Hospital from 1895 to 1899; author of "Diagnosis and Treatment of Diseases of Women," co-author of "Diseases of Women," "Gynecology for Nurses," "Synopsis of Gynecology," "Operative Gynecology," and "Foreign Bodies Left in the Abdomen"; died in Clayton March 10, aged 82, of cerebral hemorrhage.

**Richards, Theodore Wright** ✠ medical director, captain, U. S. Navy, retired, Savannah, Ga.; born in Portsmouth, Va., Oct. 8, 1870; Columbian University Medical Department, Washington, D. C., 1893; commissioned an assistant surgeon in the medical department of the Navy Nov. 12, 1894; veteran of the Spanish-American War; served at various naval stations aboard the fleet; in April, 1910, senior medical member of the retirement board; in 1915-1916 served as the medical officer aboard the *USS Maine*; prior to the onset of World War I was liaison officer with the American Red Cross at the Bureau of Medicine and Surgery and officer in charge of personnel for Naval Base Hospital No. 1 in France; during World War I was a special medical advisor to the commanding general of the armed forces for the medical department of the Navy; retired from active duty Nov. 1, 1934, for physical disability; died March 20, aged 80, of heart disease.

✠ Indicates Fellow of the American Medical Association.

**Parham, John Calhoun** ✠ medical director, captain, U. S. Navy, retired, San Diego, Calif.; born Oct. 4, 1885; Medical College of Alabama, Mobile, 1906; specialist certified by the American Board of Internal Medicine; entered the medical corps of the U. S. Navy as a lieutenant (jg) on July 7, 1911; served as medical officer aboard the *USS Birmingham* and was also the senior medical officer of the U. S. Naval Base No. 27 at Plymouth, England, during World War I; on the staff of the commander, base force, Pacific, 1936-1937, followed by a two-year tour of duty at the U. S. Naval Hospital, San Diego, Calif.; in 1939-1940 executive officer at the Naval Hospital in Pearl Harbor; retired from active duty Dec. 1, 1940, because of physical disability; died in the U. S. Naval Hospital March 26, aged 65, of cerebral thrombosis and hypertensive cardiovascular disease.

**Beckman, William Woods,** New York; born in Altoona, Pa., Aug. 22, 1910; Harvard Medical School, Boston, 1935; assistant dean and assistant professor of medicine at the New York University College of Medicine, a unit of the New York University-Bellevue Medical Center; at one time an instructor and associate in medicine at his alma mater; research fellow of the American College of Physicians; member of the American Medical Association; served as intern, resident, assistant in medicine, and assistant physician at Massachusetts General Hospital in Boston; formerly associated with the Rockefeller Institute for Medical Research and the Rockefeller Institute Hospital; participated in the report of the Joint Committee on the Study of Social and Environmental Factors in Medicine published by the Commonwealth Fund; died April 12, aged 40.

**Davis, George Edwin** ✠ New York; born in Harrodsburg, Ky., Feb. 18, 1866; Bellevue Hospital Medical College, New York, 1889; specialist certified by the American Board of Otolaryngology; formerly emeritus professor of otology at the New York Polyclinic Medical School and Hospital; instructor of otology at the New Post-Graduate Medical School and Hospital from 1908 to 1914; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; chairman of the medical research board of the American Expeditionary Forces during World War I; later retained a captaincy in the Officers Reserve Corps; consulting aural surgeon, Manhattan State Hospital, New York, Central Islip State Hospital, Central Islip, and United Hospital, Port Chester; died March 24, aged 85, of coronary thrombosis.

**Anderson, John Birckhead** ✠ Baraboo, Wis.; born in St. Louis in 1869; Washington University School of Medicine, St. Louis, 1892; honorary member of the Washington State Medical Association; for many years city health officer of Spokane, Wash., and later commissioner of health of the state of Washington; during World War I served on the Council of Defense and was a member of the food conservation committee; in 1921 commissioned a senior surgeon in the U. S. Public Health Service reserve; served on the staffs of various Veterans Administration hospitals; at one time chief neuropsychiatrist at the Hines (Ill.) Hospital, where he organized and was chief of the diagnostic center until his retirement in 1938; died March 22, aged 82, of Parkinson's disease and uremia.

**Hunt, Robert Walter** ✠ New York; born in Santa Barbara, Calif., July 12, 1904; Stanford University School of Medicine, San Francisco, 1933; assistant clinical professor of urology at New York Medical College, Flower and Fifth Avenue Hospitals; certified by the National Board of Medical Examiners; specialist certified by the American Board of Urology; member of the American Urological Association; fellow of the American College of Surgeons; served during World War II; assistant attending surgeon and from 1935 to 1938 resident in urology at the James Buchanan Brady Foundation of the New York Hospital; director of urology at St. Clare's Hospital, where he died March 31, aged 46, of intracranial hemorrhage.

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**Hoffman, Charles Wilbur** ✙ Baltimore; born in Philadelphia, Dec. 19, 1876; Jefferson Medical College of Philadelphia, 1903; formerly on the faculty of Johns Hopkins University School of Medicine and the University of Maryland School of Medicine; served during World War I; as lieutenant colonel in the medical reserve corps, served as surgeon for the Maryland state guard from 1944 until 1948; at one time associated with the U. S. Public Health Service, and was surgical consultant for several local public health hospitals until 1932; affiliated with the Church Home and Infirmary, St. Joseph's, St. Agnes, Mercy, West Baltimore General, and Franklin Square hospitals; died March 15, aged 74, of carcinoma of the bladder.

**Sager, Edward Miller** ✙ colonel, MC., U. S. Air Force, retired, Fort Worth, Texas; born in Yeagertown, Pa., Jan. 31, 1901; Medical College of Virginia, Richmond, 1930; entered the Army in 1930; in 1934 was transferred to the Air Force as a flight surgeon; during World War II served as post surgeon at Barksdale and Maxwell fields and as flight surgeon with the 12th Air Force in Italy; won the Bronze Star medal and three battle stars; surgeon with the Eighth Air Force at Carswell Air Force Base; retired from the Air Force Sept. 30, 1949; assistant city health director; died at Carswell Air Base hospital March 19, aged 50, of acute coronary occlusion.

**Moore, John Thomas** ✙ Houston, Texas; University of Texas School of Medicine, Galveston, 1896; professor of clinical surgery at Baylor University College of Medicine; member of the Southern Surgical Association; fellow of the American College of Surgeons; past president of the Harris County Medical Society; specialist certified by the American Board of Surgery; served during World War I; consulting surgeon, Hermann and Methodist hospitals; affiliated with Jefferson Davis Hospital; received the honorary degree of doctor of science from Texas Christian University, Fort Worth; died March 18, aged 86, of coronary thrombosis.

**Bowen, John Thomas** ✙ Clearwater, Fla.; University of Pennsylvania School of Medicine, Philadelphia, 1910; served during World War I; on the staff of the Morton Plant Hospital, where he died March 16, aged 75, of coronary thrombosis and arteriosclerosis.

**Bowers, George Francis Haskell** ✙ Newton, Mass.; Harvard Medical School, Boston, 1911; member of the New England Pediatric Society; died in Newton-Wellesley Hospital, Newton Lower Falls, April 1, aged 67.

**Bradt, Elizabeth Gilchrist,** Castile, N. Y.; Boston University School of Medicine, 1915; died in Wyoming County Community Hospital, Warsaw, April 4, aged 61, of multiple sclerosis.

**Burch, Albert J.,** Alpine, Calif.; Fort Worth (Texas) School of Medicine, Medical Department of Fort Worth University, 1899; died in La Mesa (Calif.) Hospital April 3, aged 77, of coronary occlusion.

**Clayton, John M.,** West Louisville, Ky.; University of Louisville Medical Department, 1888; member of the American Medical Association; died in Our Lady of Mercy Hospital, Owensboro, April 3, aged 85.

**Collins, William David,** Hudson, N. Y.; Albany Medical College, 1907; member of the American Medical Association; served as commissioner of health; affiliated with Columbia Memorial Hospital, where he died April 10, aged 67, of heart failure.

**Deutsch, Morris I.** ✙ Far Rockaway, N. Y.; University and Bellevue Hospital Medical College, New York, 1914; member of the staff of the Rockaway Beach (N. Y.) Hospital and St. Joseph's Hospital; died April 4, aged 58, of coronary thrombosis.

**Dudley, Gustave Beauregard** ✙ Martinsville, Va.; Medical College of Virginia, Richmond, 1918; served during World War I; died April 7, aged 58.

**Ferris, Edward Day,** Brooklyn; University of the City of New York Medical Department, New York, 1893; member of the American Medical Association; fellow of the American College of Surgeons; member of the Selective Service Board during World War I; on the staff of the Norwegian Lutheran Deaconesses' Home and Hospital, where he died April 5, aged 86.

**Fuller, Spencer Sam** ✙ Riverside, Ill.; Rush Medical College, Chicago, 1902; past president of the school board; served as village health commissioner; died April 3, aged 77, of coronary occlusion.

**Gardiner, Harry Miller** ✙ Medfield, Mass.; Hahnemann Medical College and Hospital of Philadelphia, 1931; specialist certified by the American Board of Psychiatry and Neurology; member of the American Psychiatric Association and the New England Society of Psychiatry; served during World War II; assistant superintendent of Medfield State Hospital; died in Baker Memorial Hospital, Boston, April 3, aged 46, of cardiac hypertrophy, hypertension, and nephrosis.

**Gibson, John Francis,** Olympia, Wash.; University of Texas School of Medicine, Galveston, 1906; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; on the staff of St. Peter's Hospital; died April 2, aged 70.

**Gulliver, Francis Daniel** ✙ New York; Columbia University College of Physicians and Surgeons, New York, 1903; affiliated with St. Vincent's Hospital; died April 12, aged 72, of neoplasm.

**Johnson, James Paton,** Dallas, Texas; Barnes Medical College, St. Louis, 1904; died in Baylor University Hospital March 27, aged 74, of acute cardiac infarction.

**Johnston, Walter,** Seattle; Jefferson Medical College of Philadelphia, 1887; died March 24, aged 88, of arteriosclerotic heart disease.

**Kaveney, Irving Edward** ✙ Port Angeles, Wash.; University of Illinois College of Medicine, Chicago, 1931; served during World War II; died recently, aged 46.

**Kinloch, Everett Starke,** Troy, N. Y.; Albany (N. Y.) Medical College, 1895; died March 17, aged 82, of right hemiplegia.

**Kyser, James Allen,** Madison, Ala.; Tulane University of Louisiana, New Orleans, 1911; member of the American Medical Association; chairman of the Farmers & Merchants Bank; died March 11, aged 70, of cerebral hemorrhage.

**Maurer, Frederick Henry** ✙ Peoria, Ill.; Rush Medical College, Chicago, 1915; specialist certified by the American Board of Pediatrics; member of the American Academy of Pediatrics, American Association of Physicians and Surgeons, Central Illinois Pediatric Society, and Alpha Omega Alpha; member and past president of the Peoria Medical Society; served during World War I; member and past president of the St. Francis Hospital staff; died April 22, aged 60, of coronary thrombosis.

**Montgomery, Charles William,** Pasadena, Calif.; Kentucky School of Medicine, Louisville, 1892; also a druggist; died March 13, aged 82.

**Mooney, Charles Neil,** Oakland, Calif.; Cooper Medical College, San Francisco, 1906; died in San Francisco April 4, aged 68, of tuberculosis.

**Morton, Andrew Wade** ✙ San Francisco; University of Tennessee Medical Department, Nashville, 1892; died March 26, aged 82, of coronary occlusion.

**Myers, John George Leonard,** Bloomingdale, Ind.; Medical College of Indiana, Indianapolis, 1884; died April 1, aged 93.

**Neumann, William Henry** ✙ Sheboygan, Wis.; Northwestern University Medical School, Chicago, 1904; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; on the staffs of Memorial Hospital and St. Nicholas Hospital, where he died March 11, aged 71, of coronary thrombosis.

**Norconk, Ward Herman** ✙ Bear Lake, Mich.; Chicago College of Medicine and Surgery, 1917; past president of the Manistee County Medical Society; served during World War I; affiliated with Mercy Hospital and Sanitarium, where he died March 29, aged 59, of coronary thrombosis.

**O'Connor, Charles Emmett,** Washington, D. C.; Georgetown University School of Medicine, Washington, D. C., 1895; retired medical officer of the department of interior; died March 29, aged 83.

**Oertel, Henry Benjamin,** Kissimmee, Fla.; University of Georgia School of Medicine, Augusta, 1901; member of the American Medical Association; died recently, aged 76.

**Parnell, Charles Nicholas,** Maplesville, Ala.; Medical College of Alabama, Mobile, 1891; member of the American Medical Association; died April 5, aged 84, of senile dementia and diabetes mellitus.

**Pike, Walter Franklin,** Sonora, Calif.; Denver and Gross College of Medicine, 1903; died March 25, aged 74.

**Pratt, Charles Augustus** ✠ New Bedford, Mass.; Harvard Medical School, Boston, 1891; an Associate Fellow of the American Medical Association; honorary trustee and past president of the medical staff of St. Luke's Hospital; died April 3, aged 88, of terminal pneumonitis, diabetes mellitus, and arteriosclerosis.

**Rieser, Sidney Loeb** ✠ New York; University and Bellevue Hospital Medical College, New York, 1916; on the staffs of Sydenham and Doctors hospitals; died April 12, aged 57, of coronary thrombosis.

**Sargent, Laurrie Dodd,** Washington, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1903; past president of the Washington County Medical Society; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians and the National Tuberculosis Association; served during World War I; trustee of the Woodville (Pa.) State Hospital; affiliated with Hillsview Sanitarium and Washington Hospital, where he died April 6, aged 72, of coronary thrombosis.

**Schermerhorn, John Ralph** ✠ Schenectady, N. Y.; Albany Medical College, 1905; member of the American Academy of Dermatology and Syphilology; past president of the Schenectady County Medical Society; affiliated with Ellis Hospital; died in Tampa, Fla., March 28, aged 71.

**Schmidt, Frederick Hermes,** Woodstock, Ill.; Chicago College of Medicine and Surgery, 1911; member of the American Medical Association; died near Genoa City, Wis., March 22, aged 68, of injuries received in an automobile accident.

**Schwankhaus, Paul H.,** Louisville, Ky.; University of Louisville Medical Department, 1898; on the staffs of Deaconess and SS Mary and Elizabeth hospitals; died March 13, aged 72, of hypertensive cardiovascular disease.

**Siler, Levi Steely,** Corbin, Ky.; Hospital College of Medicine, Louisville, 1903; member of the American Medical Association; died March 21, aged 73, of multiple sclerosis.

**Skarstrom, William,** Duxbury, Mass.; Harvard Medical School, Boston, 1901; professor emeritus of hygiene and physical education at Wellesley (Mass.) College; died March 24, aged 81.

**Slattery, George Norbert** ✠ New York; University and Bellevue Hospital Medical College, New York, 1909; formerly clinical assistant professor of medicine at his alma mater; at one time house physician for the Metropolitan Opera Company; died March 27, aged 69, of cardiac disease.

**Smith, Rolla Lamar,** Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1889; member of the American Medical Association; died March 17, aged 84, of pneumonia.

**Sooy, John Lynch,** Pleasantville, N. J.; College of Physicians and Surgeons, Baltimore, 1912; died in Atlantic City (N. J.) Hospital March 29, aged 64, of carcinoma of the pancreas.

**Spier, Oscar Agnew,** New York; Eclectic Medical College of the City of New York, 1901; served in France during World War I; died March 8, aged 69, of coronary thrombosis.

**Spyker, John Huston,** Decatur, Ill.; College of Physicians and Surgeons, Baltimore, 1902; member of the American Medical Association; affiliated with Decatur and Macon County Hospital; died March 25, aged 74, of heart disease.

**Steedle, Joseph G.,** McKees Rocks, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1902; member of the American Medical Association; served in the state legislature; for one term burgess of McKees Rocks; on the staff of the Ohio Valley General Hospital; died March 8, aged 70, of coronary occlusion.

**Steele, Robert Lowry,** McKeesport, Pa.; University of Pittsburgh School of Medicine, 1903; member of the American Medical Association; died April 3, aged 74, of carcinoma of the prostate.

**Stephenson, Frank Halleck,** Cazenovia, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1878; member of the American Medical Association; for many years affiliated with the Memorial Hospital in Syracuse; died March 8, aged 94, of cerebral arteriosclerosis.

**Stiffey, Philip Ellsworth,** Columbus, Ohio; Starling-Ohio Medical College, Columbus, 1912; member of the American Medical Association; on the staff of the Grant Hospital; died March 11, aged 67, of heart disease.

**Stoddard, James** ✠ Buffalo; L.R.C.P., Edinburgh, L.R.C.S. Edinburgh, and L.R.F.P. & S., Glasgow, 1888; University of Edinburgh Faculty of Medicine, 1892; an Associate Fellow of the American Medical Association; died in Derby, N. Y., April 8, aged 94, of arteriosclerosis.

**Stowell, Harold Bishop,** Watertown, N. Y.; Albany Medical College, 1895; member of the American Medical Association; died in the House of the Good Samaritan March 16, aged 77, of heart disease following pneumonia.

**Stuart, Albert Berry,** Cloquet, Minn.; University of Nebraska College of Medicine, Omaha, 1904; member of the American Medical Association; served in France during World War I; for many years chairman of the library board; member of the fire commission; affiliated with St. Luke's Hospital in Duluth; died March 21, aged 68, of cerebral hemorrhage.

**Summerbell, Ferris,** Fallon, Nev.; Baltimore Medical College, 1905; member of the American Medical Association; died in Churchill County Hospital in Churchill March 2, aged 73, of pulmonary edema and cardiac decompensation.

**Swan, Charles Arthur** ✠ Cleveland; Western Reserve University School of Medicine, Cleveland, 1916; member of the American Association of Industrial Physicians and Surgeons; affiliated with Lakeside, Charity, and St. Luke's hospitals; medical director of the Standard Oil Company and Yellow Cab Company; for many years medical director of the Halle Brothers Department Store; chief medical examiner for the Equitable Life Assurance Society of the United States; died in Bradenton, Fla., April 4, aged 59, of injuries received in an automobile accident.

**Thrasher, A. Wade,** Los Angeles; Central College of Physicians and Surgeons, Indianapolis, 1894; formerly on the staff of Methodist Hospital, Indianapolis; died March 29, aged 78, of cardiac decompensation.

**Tupper, Virgil L.** ✠ Bay City, Mich.; Jefferson Medical College of Philadelphia, 1896; an Associate Fellow of the American Medical Association; past president of the Bay County Medical Society; fellow of the American College of Surgeons; on the staff of Mercy Hospital; died April 13, aged 82.

**Vates, Charles William** ✠ Pittsburgh; University of Pittsburgh School of Medicine, 1912; served overseas during World War I; member of the staff of South Side Hospital and on the visiting staff of Magee Hospital; served as director of schools and director and vice president of the First Federal Savings and Loan Association of Mount Oliver; died April 2, aged 66, of coronary occlusion.

**Weinberg, Frederick Julius,** New York; Johann Wolfgang Goethe-Universität Medizinische Fakultät, Frankfurt-am-Main, Prussia, Germany, 1924; died March 12, aged 57.

**Wickstrom, Albert M.** ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; died in the Salvation Army Hospital April 1, aged 78, of carcinoma of the prostate.

**Williamson, George H.** ✠ Neenah, Wis.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; past president of the Winnebago County Medical Society; supreme medical examiner emeritus for the Equitable Reserve Association; a director of the Wisconsin Anti-Tuberculosis Association; for many years chairman of the Neenah Health Council; died April 2, aged 82.

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# GOVERNMENT SERVICES

## ARMY

**Gastro-enteritis.**—The Office of the Army Surgeon General reports that in the outbreak of acute gastro-enteritis at Fort Meade, Md., on May 17, a total of 389 men were sick enough to report to the dispensary, and 10 are known to have become ill on a bus after leaving the post. Of the 389 men, 102 were hospitalized. Epidemiological evidence indicates that corned beef hash served at breakfast May 17 was the source of infection. The incubation period varied from one to six hours. A staphylococcus was isolated from vomitus, but this organism has not yet been incriminated as a toxin producer.

An outbreak of gastro-enteritis that occurred among Air Force personnel stationed in the Pentagon Building May 17 is still under investigation. The Bolling Air Force Base Laboratory reports that a staphylococcus has been isolated from remnants of ham that was served. It has not been determined whether the organism is a toxin producer.

**Award and Commendation.**—The Legion of Merit was recently awarded to Col. Robert C. Robertson, Chattanooga, Tenn. The citation reads in part as follows:

"Colonel Robert C. Robertson, (then Lieutenant Colonel), Medical Corps, performed exceptionally meritorious service as Orthopaedic Consultant, Office of the Chief Surgeon, United States Army Forces, Pacific Ocean Area, from March 1942 to September 1945. He greatly assisted in the formulation of policies and the selection, training and supervision of personnel in connection with the treatment of orthopaedic casualties in the theater. Colonel Robertson carried on his mission of supervision and training within the combat area hospitals and down through the chain of evacuation, to the battalion aid stations of the United States Army Forces engaged in Saipan, Guam, Leyte and Okinawa. Through his outstanding professional skill, leadership, understanding and tact, he made a material contribution to the mission of the Medical Department in the Pacific Ocean Area."

**Personal.**—Maj. Gen. George E. Armstrong, the new Surgeon General, was named outstanding medical alumnus of 1951 by the Indiana University School of Medicine, Indianapolis, at the annual alumni day May 9. General Armstrong delivered an address on the "Armed Services and the Physician."

## AIR FORCE

**Award Given Colonel Mashburn.**—Col. Neely C. Mashburn, MC, U. S. Air Force, retired, who devised an apparatus 25 years ago that is still being used to predict flying aptitude in cadet applicants, is the 1951 recipient of the Raymond F. Longacre Award of the Aero Medical Association. Used extensively during and since World War II, the complex coordination test has proved one of the most reliable means to predict success in pilot training. It has been given more than a million applicants. Despite the great differences in training methods as well as in the size and speed of aircraft used now and those of 25 years ago, the Mashburn test remains highly predictive.

The Longacre Award, named in commemoration of a pioneer Air Force flight surgeon, is given annually for outstanding accomplishment in the psychiatric and psychological aspects of aviation medicine. Colonel Mashburn, who retired in 1948 after more than 31 years of active service, now lives in San Antonio, Texas.

**New Preventive Medicine Chief.**—Col. Fratis L. Duff has assumed the duties as chief of the Preventive Medicine Division, Office of the Surgeon General, U. S. Air Force. Colonel Duff received his master's degree in public health at Johns Hopkins University in 1950, and he has been certified by the American Board of Preventive Medicine and Public Health as a specialist; he is presently completing his doctorate in this field. Practical experience includes three years of field work in Egypt and Japan; five years of teaching tropical medicine and parasitology at the School of Aviation Medicine, and two years as sanitary engineer for the Public Health Department in his home city, Lawton, Okla.

**Personal.**—At the recent meeting of the Aero Medical Association in Denver Maj. Gen. Harry G. Armstrong, Surgeon General of the U. S. Air Force, was installed as president, while Maj. Gen. Dan C. Ogle, Deputy Surgeon General, U. S. Air Force, was elected vice president. Col. Robert J. Benford (MC) of the Air Force, headquarters Air Research and Development Command, was reelected to the executive committee. The next meeting will be held in Washington, D. C., next spring.

**Aero Medical Laboratory.**—The U. S. Aero Medical Laboratory will participate in a joint wet-cold field test at Cold Bay, Alaska, next September. The test will be coordinated with the Alaskan Air Command. Invitations to participate have been sent to the Royal Canadian Air Force and Royal Air Force.

## VETERANS ADMINISTRATION

**Service for Veterans Who Stutter.**—Veterans who stutter may be helped through a nine-week course offered under the G.I. educational bill by Northwestern University, Evanston, Ill. The course, which is called an "Intensive Group Stuttering Project," is a program of both individual and group therapy procedures by the staff of the speech clinic. The program has helped many veterans since its inception in 1949. Veterans who seek help through this program must complete eligibility processing and be enrolled on or before July 25, 1951. No college "credit" in course hours is given. To apply for the course, the veteran must come to the clinic for an interview, at which time his needs will be assessed, and, if eligible, his eligibility processing will be initiated. Receipt of eligibility papers from the VA completes enrolment. No other steps need be taken beyond bringing these papers to the clinic. Contact Charles R. Elliott, Speech Clinic, Northwestern University, Evanston, Ill. Phone Evanston, University 4-1900, extension 247.

**National Advisory Committee.**—Representatives of 41 national organizations affiliated with the Veterans Administration voluntary service national advisory committee met at the VA hospital in Framingham, Mass., May 24-25 to observe volunteer workers at their tasks in helping care for patients. The visitors observed a demonstration by hospital staff members of the team approach to the so-called "whole person" care and treatment program at the opening session. The delegates observed the work of volunteers in all phases of hospital work.

The committee heard addresses by Carl R. Gray Jr., administrator of veterans affairs, and Dr. Joel T. Boone, vice admiral (MC, USN), retired, the VA's chief medical director. A part of the session was devoted to an evaluation of the volunteers' work at the hospital. Volunteer hospital workers, the national and local hospital advisory committees, the hospital staff, and VA central office staff members attending participated in the discussion.

**Hospital News.**—On May 10 the staff of the Veterans Administration hospital at Outwood, Ky., was addressed by Dr. A. J. Miller, professor of pathology, University of Louisville School of Medicine, on "Tumors of the Kidney." Dr. E. L. Pirkey, professor of radiology, addressed the group May 17 on "Medical Uses of Radioisotopes."

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## PUBLIC HEALTH SERVICE

**New Clinical Center for Medical Research.**—The President will lay the cornerstone of the Public Health Service's new Clinical Center for Medical Research at Bethesda, Md., June 22. A large number of medical scientists and educators are expected to attend the cornerstone ceremonies.

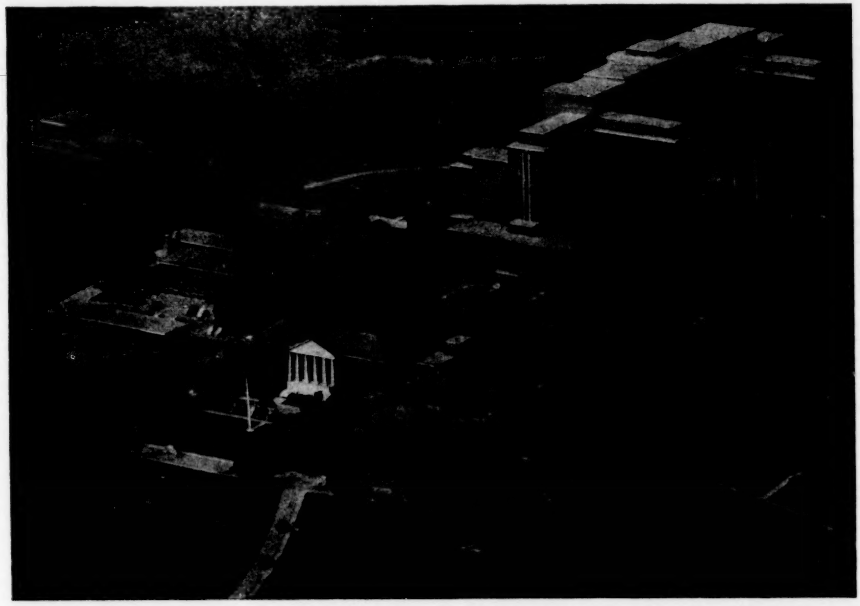
This unique 500-bed addition to the National Institutes of Health is now under construction. Authorized by Congress in 1947, it was started in 1948 and will be completed in the latter part of 1952 at a cost of about 40 million dollars. A limited number of special patients will be admitted by January, 1953, and full operation will be reached about a year later.

Dr. Leonard A. Scheele, Surgeon General of the Public Health Service, described the Clinical Center as "the only combined laboratory-hospital in the world especially designed for research on a group of important chronic diseases—cancer, heart disease, mental, metabolic and neurological diseases, and blindness." Dr. Scheele said that close coordination of basic and clinical research within the walls of a single hospital will help reduce the time lag between a laboratory discovery and its use for the benefit of patients. He said the new center, unlike the average hospital, will have twice as much space for laboratory research as for patient care. Bed and laboratory facilities will be set aside, floor by floor, for the study of each of the diseases with which the National Institutes of Health is specifically concerned. Restriction of patients to those having the few but extremely important diseases undergoing investigation will permit scientists to study in a short time relatively large numbers of patients with the same disease.

Dr. Scheele emphasized that while the center will be devoted to research, the welfare of the patient will be of primary importance. The individual patient will receive, according to his needs, the best medical care, including surgery, nursing, psychiatry, and all other specialized services.

Dr. John A. Trautman, now medical officer in charge of the Marine Hospital, Staten Island, N. Y., will be the director of the new Clinical Center for Medical Research. A career officer with 22 years in the Public Health Service, Dr. Trautman brings to his new post wide experience both as a hospital administrator and as a clinical investigator.

**Hill-Burton Act Hospitals.**—The Public Health Service on March 31, 1951, had approved 1,524 applications for the construction of hospitals, health centers, and related facilities under the Hill-Burton Hospital Survey and Construction Act. The estimated cost of the construction is $1,105,510,000, of which the federal share is about $402,115,000. The projects would add 73,000 beds and 233 health centers to this country's medical care facilities. Construction projects that have been completed and are now in operation total 429. These provide nearly 13,000 of the 73,000 beds that will be made available by approved projects.



The new Clinical Center for Medical Research.

The following lists show the states with the largest number of approved projects, those adding the largest number of beds, and those with more than 500 beds provided by projects completed and in operation.

*States with 50 or more approved projects:* South Carolina, 106; Texas, 88; Georgia, 86; North Carolina, 81; Mississippi, 73; New York, 63; Oklahoma, 59; Ohio, 52, and Louisiana, 52.

*States with approved projects providing over 2,500 beds:* Texas, 5,057; Ohio, 3,526; North Carolina, 3,462; New York, 3,389; Pennsylvania, 3,086; Oklahoma, 2,973; Puerto Rico, 2,909; New Jersey, 2,824, and Kentucky, 2,545.

*States with over 500 beds in completed projects:* Texas, 1,132; North Carolina, 934; Kentucky, 707; Tennessee, 612; Georgia, 603; Florida, 555; Mississippi, 554, and Oklahoma, 512.

Seventy-four of the 233 approved health center projects have been completed and are in operation. Mississippi has 23, South Carolina 22 and Georgia 15. Other states have but one or two completed projects.

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# FOREIGN LETTERS

## AUSTRALIA

**Encephalitis Epidemics in Australia.**—Epidemics of severe human encephalitis are in progress in various parts of this continent. The evidence indicates that they are due to the Japanese B type of encephalitis virus; horses and dogs are likely reservoirs; a mosquito is the possible vector, and migratory birds may be the means of introduction into the country.

There have been previous epidemics of encephalitis in Australia—1917-1918, 1922, and 1925. The present epidemic showed itself early this year in an area known as the Murray Valley, in North Victoria. This area is used for irrigated agriculture, and mosquitoes are prevalent due to the abundant water.

The typical case history is one of commencing irritability and headache, followed by nausea and vomiting with temperature to about 105 F. A moderate degree of neck stiffness then develops, with some irrationality, even to violence. Tremors and localized spasticity are common. Coma then develops, associated with muscle flaccidity. Some die, and others slowly improve and completely recover.

Typical laboratory findings in the spinal fluid are as follows: 100 cells per cubic millimeter (range 20-750) comprising polymorphonuclear leukocytes, lymphocytes, and up to 10% monocytes. Protein content is slightly increased. Chlorides are decreased, and sugar is normal or slightly decreased. Children below 12 years predominated in the age distribution, but all ages are susceptible. The majority were males.

Frozen central nervous system tissue was brought to the Walter and Eliza Hall Institute of Medical Research in Melbourne, and emulsions were inoculated into developing chick embryos and laboratory animals. After five days, on second passage, focal lesions were produced on the chorioallantoic membrane of the chick embryo. When this was transferred to the brains of mice, rapidly fatal encephalitis developed.

It was found that the focal lesions on the chick membrane provided a valuable antigen for the complement-fixation test. Nearly all (19 of 21) of the convalescent encephalitis patients in the area showed high titer antibody in their blood serum. Results in 10% of 109 contacts were positive. Antibodies were present in 11 out of 19 horses and two of four dogs in the area affected. But results were negative in the serums of 53 sheep, 17 cows, 5 ducks, and 16 pigs.

The serums of the staff of the Hall Institute did not contain antibodies. Serum in isolated cases of encephalitis in Melbourne also failed to show antibodies.

A guinea pig serum prepared against Japanese encephalitis B reacted strongly in a complement-fixation test with the virus isolated in this epidemic. This serum had been prepared in the Commonwealth Serum Laboratories. From a study of the other properties of the virus, the clinical and epidemiological characters, and the serological evidence, there is a strong assumption that the virus isolated is identical with that of Japanese B encephalitis.

By an unfortunate coincidence, this Murray Valley area had been recently the venue of a successful transmission experiment of the virus of myxomatosis among wild rabbits, the vector also being the mosquito. (The wild rabbit is a serious pest in Australia.) Some public alarm was caused by the association of the two epidemics, and the use of rabbit flesh as a food fell into serious disfavor. Fears were mostly allayed, however, after the public statement by Sir F. M. Burnet, director of the Hall Institute and research professor of experimental medicine in the University of Melbourne, that there was no relation between the two diseases. The encephalitis virus produces no symptoms or lesions in rabbits.

Two thousand miles away from the Murray Valley, on Mornington Island in the Gulf of Carpenteria (Northern Australia), serums from aboriginal patients suffering from encephalitis have been shown to contain complement-fixing antibodies active against the Murray Valley virus. A field study is in progress by the staff of the Queensland Institute of Medical Research, and serums will be taken, for investigation at the Hall Institute in Melbourne, from every inhabitant of the island and every accessible animal and bird. Sporadic cases in rural Queensland will also be investigated. This outbreak, occurring as it does in a geographic line between Japan and Victoria, lends support to the view that the virus was introduced by migratory birds.

**Death of "Flynn of the Inland"**—On May 5 occurred the death of a legendary character who devoted his life to the development of medical services in the sparsely populated interior of this country. He was superintendent of the Australian Inland Mission, a position he had held for 40 years. He had seen it grow from a plan drawn with a stick on the sands of Central Australia to a highly efficient service covering a territory equal in area to half of Europe (2 million square miles) and costing $100,000 per year to maintain.

The Very Reverend Dr. John Flynn, O.B.E., ranks with such immortals as Gorgas of Panama, Antle of British Columbia, and Grenfell of Labrador. He was a Presbyterian minister and for the usual term occupied the highest position in that church in Australia, that of moderator-general. His vision and his pioneering spirit transcended that of a denominational dignitary. It is indeed seldom that a man is canonized in his lifetime.

During the period 1912-1928, he had established 13 small hospitals, each staffed by two trained nurses; in May 1928 at Cloncurry, in Western Queensland, the first "Flying Doctor" set out on his rounds. His territory was larger than France. Only two years previously, Alfred Traegar, an electrical engineer of Adelaide, had designed a small wireless set capable of receiving and transmitting voice and Morse code. The power for this is generated by the operator riding a fixed bicycle, the back wheel of which drives a generator. Until radiotelephony could be used, Traegar designed a typewriter keyboard that automatically sent out the letter in Morse code. All the operator had to do was to sit on the bicycle and pedal, then tap out the message on the keyboard of the typewriter. Even that ingenious system was developed to the stage of voice transmission. Before 1939 the cost of a pedal-generated "transceiver" was about £70 ($155), with an annual upkeep cost of $6. A child of 10 could operate it. Up to 500 miles is a normal range. It has been effective over 2,000. This system of communication enables the mother in a remote homestead to "ring up" the doctor and ask his advice. With the aid of the Flying Doctor Medical Chest in every homestead, many common ailments can be treated and emergency care given. It is in overcoming the feeling of isolation that the Flying Doctor serves so well. The service is aptly known as a "Mantle of Safety," because it gives these lonely people an increased feeling of security.

The Flying Doctors are usually given other duties by the government. Dr. Allen Vickers, one of the first of them, had been appointed a police magistrate, protector of aborigines, and mining warden. One day he flew to Marble Bar (the hottest town in Australia) from Port Hedland in the far northwest. During the day, he saw 12 patients, performed two operations, held an inquest, conducted a court case, pulled innumerable teeth, renewed the licenses of five hotels, and granted applications for mining leases and permits for native labor. Then he flew home for dinner in his aerial ambulance.

On another occasion, a dislocated shoulder was reduced by wireless. The doctor was in his surgery at Broken Hill, seated before a microphone. A woman pedalled her transceiver set at Innamincka, 400 miles away. In the room was the injured man sitting on a stool. A police trooper and stockman stood by the man to do the manipulating according to the directions of the doctor, relayed over the woman's shoulder from her position at the set.

The items in these letters are contributed by regular correspondents in the various foreign countries.

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"Hold his elbow close to his side. Have you got that? Over to you." "We are holding his elbow close to his side. What next? Over to you."

"Let the other man hold the forearm; do you get the idea? Over to you."

And so it went on, until a grunt from the patient and a dull click from the shoulder made medical history.

John Flynn's dream has not only come true, it has proved itself and has become a permanent part of Australia's medical services. It provides a means whereby the practice of medicine may be carried to a large number of people who cannot efficiently be reached in any other way. On the badge of the Flying Doctor Service are the three words "Medicine, Aviation, Radio."

McGill University in 1940 conferred on John Flynn the honor of doctor of divinity in recognition of his life's work to humanity. In 1933 he was honored by the King with the Order of the British Empire. So far, in no other country of the world has John Flynn's triology of medicine, the airplane, and the radio been associated in such a service to isolated people. This saga of Flynn's is a contribution which Australia offers to other nations to assist them in solving similar problems, which must exist in many countries.

**Dropping Medical Supplies from the Air.**—In the interests of speedy delivery of perishable medical supplies, such as blood for transfusions and the equipment for its administration, experiments were made in Victoria with various types of dropping equipment. One of the parachutes tested was developed in New Zealand for "chuting" supplies to deer stalkers in the mountains. It is made of sacking, and it is claimed that anyone who can use a bag needle can make one in an hour. The blood bottles (½ liter) were packed in sawdust in a cardboard carton, wrapped in two woolen blankets. This was attached to a sacking parachute. The drop was from 600 feet. Recovery was completely satisfactory.

Similar results were obtained with a full drop in a "storpedoette," invented by Mr. T. R. Morris. This container is made of cardboard, 2 ft. long by 8 in. wide, and shaped like a bomb. It has a pressurized conelike nose which is designed to burst at a pressure of 3,500 lb. The nose is crushed on impact, and this protects the contents of the package.

## BELGIUM

**Hospitals for the Insane.**—There is a tendency toward replacement of the term "insane asylum" by psychiatric clinic or hospital. The psychological reasons in favor of this modification are understandable. However, this change must be simultaneous with reforms to convert all the asylums into institutions of true hospital type. The management of hospitals for the insane needs great basic changes. Guided by these facts, Lamsens, in a presidential address opening the last session of the Society of Mental Medicine of Belgium, traced the history of the Duffel Asylum, near Antwerp. Duffel was a small asylum that could house 600 patients. It was destroyed in 1914, and reconstructed after the war. It was then reserved for chronically ill patients, who numbered only 234 in 1926. In the course of the last 25 years, new services were added—a medico-pedagogical center, a maternity ward, an antituberculosis dispensary, an establishment for children and a school for nurses. The mental patient benefits from the existence of other services which create a therapeutic atmosphere of assistance as well as an environment of transition back to society. Lamsens condemned obsolete therapy, the methods of enforcing isolation, punishment, and the abuse of sedatives, and stressed the importance of occupational therapy.

**Exophthalmos Due to Endocrine Disturbances.**—The Belgian Society of Ophthalmology devoted an important session to the study of Danis and Mahaux's report on exophthalmos caused by dysendocrisiasis. The authors, in discussing the orbito-ocular symptoms associated with hypothyroidism and hyperthyroidism, emphasize the need of exophthalmometric measurements; certain symptoms, such as the retraction of the upper eyelid, may mislead one into thinking that exophthalmos is present, while others, such as edema of the eyelids, may mask a real exophthalmos. A sudden suppression (by surgical or by medical means) of a hyperthyroid manifestation appears dangerous, since it stimulates hypersecretion of the hypophyseal thyrotropic hormone.

The emergency treatment of malignant exophthalmos may require decompressive orbital trephining or blepharorrhaphy. Some authors believe that "dry" exophthalmic goiter of the Basedow type and malignant edematous exophthalmos have a common basis, differing only quantitatively. The role of the hypophyseal thyrotropic hormone has been clearly established in this condition. This hormone induces a collagen disease characterized by an abnormal increase of mucopolysaccharides in the orbit, which causes orbital edema and degeneration of the eye muscles. Weekers maintains that there are transition forms between "dry" and edematous exophthalmos. In certain cases of thyrotoxicosis, exophthalmos may even be absent.

De Walsche discussed unilateral exophthalmos. True unilateral exophthalmos is said to be very rare. Most of the time, the exophthalmos is more pronounced on only one side. Its existence is ascribed to unknown local factors.

**Welders' Disease.**—In a paper published in *Médecin d'Usine*, Mignolet ascribed the majority of intoxications observed in 216 welders (blow torch or electric arc) to three main causes: (*a*) the cutting of sheet iron or other metals previously painted with lead colors, galvanized or, more rarely, coated with cadmium, in which case there is real volatilization of toxic metals due to the heat of the blow torch; (*b*) the use of certain rods or electrodes for electric arc welding, the covering of which contains or produces toxic products on combustion; (*c*) gases of combustion, such as carbon monoxide and nitrous gases which accumulate in confined quarters or an ill-ventilated workshop (welding in furnaces, tanks and boilers). The study of the cases observed shows that electric arc welding is definitely more dangerous and harmful than the other soldering procedures. It seems that it is possible to attribute the respiratory and digestive incidents to the fumes caused by welding. Welding shops, especially for electric welding, should be well ventilated especially in the proximity of the electric arc.

**Pulmonary Asbestosis.**—At the Society of Occupational Medicine, Clerens reported the results observed in 75 cases of asbestosis, presenting a well documented study. Function tests were performed, sputum was examined for asbestos content, and results were then interpreted. However, as in other pneumoconioses, greatest attention should be given to roentgenologic study. Clerens' statistics differ from those published by Anglo-Saxon authors, owing perhaps to the fact that the latter studied mainly workers of the asbestos textile industry, while Clerens was especially interested in fibro-cement workers. A case is reported in which it was concluded, from clinical observation and the results of necropsy, that death was due to cardiac decompensation. Clerens, however, suggested that the case history indicated that pulmonary asbestosis was a possible diagnosis.

**Hemostatic Action of Amniotic Fluid.**—At the Belgian Society of Clinical Biology, Verstraete discussed the coagulating action of amniotic fluid. The coagulation time of normal blood is shortened to half in the mixtures of one part of amniotic fluid with 25 parts of blood. The amniotic fluid does not contain prothrombin, thrombin or fibrinogen. Its coagulating action seems to be similar to the effect of suspensions of thromboplastin. It is probable that the amniotic fluid possesses the two constituents of thromboplastin (the plasma factor and the cellular factor). The thromboplastin preparation made from the placental tissue is more active, resistant and thermostabile than the extracts prepared from the lung or the brain.

**Surgery of Arteries.**—At the Belgian Society of Cardiology, Govaerts reported on the results he obtained with embolectomy and endarteriectomy. He made the following conclusions: (*a*) Embolectomy must be performed immediately if severe signs of ischemia appear within a few hours after the accident. On the other hand, if the disturbances are little pronounced, it is preferable to wait for the improvement of the collateral circulation. (*b*) In arterial thrombosis, sympathectomy favoring collateral circulation is indicated. Endarteriectomy is in principle more

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logical than venous graft, because the anatomic integrity of the vascular system of the extremity is reestablished. Endarteriectomy must be reserved for limited lesions in young persons and should be done under the protection of heparinization.

## TURKEY

**Kala-Azar in Turkey.**—At the 3d Turkish microbiology congress held at Ankara Oct. 4-6, 1948, Prof. Arif Ismet Çetingil of Istanbul University reported on kala-azar in Turkey, the first case of which appeared in Turkish medical literature in 1931. The clinical symptoms resembled those of malaria, but spleen puncture revealed Leishmania donovani. The patient, a girl of 16, was given 32 days of ethylstibamine therapy and recovered. In 1935, Professor Çetingil diagnosed kala-azar (autochthonous) in a second case, in a boy 5 years. The patient was presented at a meeting of the Turkish medical society. In 1935, kala-azar was diagnosed in three cases at the same medical department of the university in children 6 to 7 years old. Extreme splenomegaly, hepatomegaly, and anemia were present in all patients, and sternal and spleen puncture revealed Leishmania. The red blood cell count was two to three million, the white blood cell count 1,900 to 2,400, and the hemoglobin value 30 to 40%. The differential study of the white cells showed 7 transitional mononuclear cells, 44 polymorphonuclear neutrophils, 41 lymphocytes and 8% large monocytes. Results of the formol-gel and Chopra-Gupta tests were strongly positive. There were a great number of freely circulating Leishmania. Every other day these three patients received a 0.05 gm. intravenous injection of ethylstibamine; the dose was gradually increased to 0.3 gm., and the total dose was 1.95 gm. Two patients recovered; the third patient, though given a blood transfusion and pentose nucleotide, died of agranulocytosis.

From 1937 to 1948, Ord. Prof. Ihsan Hilmi Alantar of Istanbul University Children's Hospital treated 25 children, 9 months to 11 years old, for kala-azar. During the same period, 10 children, 2 to 8 years old, were treated for kala-azar by Dr. Ali Sükrü Savli, director of the Istanbul Municipal Hospital (Haseki) children's department; also, Dr. Sirri Halil Aksoy, chief of the Istanbul -Haydar Pasha General Hospital children's department, reported 13 children, 1 to 11 years old, with kala-azar. From 1938 to 1948, Dr. N. Fakaçelli of St. George Hospital, Istanbul -Pera, reported 49 cases, of which 37 were autochthonous kala-azar in children 16 months to 9 years old. In 1945, Prof Muzaffer Chevki Yener, Istanbul University medical department, reported a case of kala-azar in a man of 23. The patient had all the symptoms of kala-azar; Leishmania were recovered from the spleen and the liver, but the sternal puncture was negative. The patient was given ethylstibamine and recovered. This patient, had probably contracted the disease at Manisa, near Smyrna. Prof. Nebil Bilhan, Istanbul University, reported five cases in adults (20 to 42 years old). Three patients were from Istanbul, and two were from Bursa; four recovered, and one died of agranulocytosis. The late Dr. Osman Serefeddin Çelik, Istanbul Charity Hospital (Topkapu), diagnosed the disease in three adults. Associate Professor Celal Ertug, Ankara University, and Dr. Asil Mukbil Atakam, Koya, each reported one adult case. In 1945, Professor Çetingil reported a case in a man of 40; the patient was given ethylstibamine therapy and recovered.

The kala-azar seen in Turkey resembles the Mediterranean type, it occurs mostly in children. Almost all patients contracted the disease in Istanbul or its environs, or on the Marmara, the Aegean or the Mediterranean seacoast. Kala-azar contracted on the Black seacoast has not yet been reported. Two patients were natives of Rize, on the Black seacoast, but had evidently contracted the disease in Istanbul. There have been no hospital cases of kala-azar in Central Anatolia reported in Turkish medical literature. Kala-azar has been added to the list of insect-borne diseases occurring in Turkey. During the summer and autumn, the phlebotomus is found almost everywhere in Turkey—mostly P. papatasii, but P. major, sergenti, chinesis and minutus are also encountered. As the symptoms of kala-azar closely resemble those of malarial fever, Leishmania organisms are looked for in all patients in whom a diagnosis of chronic malaria has not been absolutely confirmed. All hospitals in urban and rural communities provide free examination and treatment. Why kala-azar in Turkey is sporadic and never epidemic has not yet been ascertained.

**Hydatid Cyst in the Parametrium.**—Dr. Emir Necip Atakam, chief of the Istanbul Şişli Hospital gynecological department, reported a case of a single, primary hydatid cyst in the parametrium. The patient, a 19 year old married woman, had a normal delivery at 17. A year later, she had an abortion, followed by an elevation of temperature for six days. From then on menstruation was painful, and a gradually increasing swelling with pain toward the anus developed in the left inguinal region. The swelling was soft on palpation and sensitive on pressure; the liver and spleen were not palpable. There was no sensitiveness in other parts of the abdomen. Pelvic examination revealed an intraligamentary cyst, which was tight and hard and the size of a large orange, the conical fluctuating end projecting into the vagina. The right inguinal region was normal; the Douglas pouch was closed. The red blood cell count was 3,340,000, the white blood cell count 8,400, and the hemoglobin value 72%. The differential study of the white cells showed 7% eosinophils; sedimentation and coagulation rates were normal. Weinberg and Casoni tests elicited positive reactions, and surgical intervention was decided on. The abdominal cavity revealed a cystic tumor the size of a child's head, and a clear fluid was removed by trocar. Through the widened opening, the germinative membrane was pulled out and cleared of all echinococci; the cavity was swabbed with iodine and closed by capitonnage. Recovery was uneventful. Most pelvic hydatid cysts are multiple, but in this case the lesion was single. Also, most Echinococcus granulosus tumors are secondary; in this case it was primary.

## BRAZIL

**Biopsy During Operation.**—Dr. Ernani T. Torres, head of the department of pathology of the Rio de Janeiro Hospital dos Servidores, published a report on 1,000 successive biopsies performed during operation; 1,258 specimens were examined. In this series, the pathological and clinical diagnoses coincided in 890 cases (89%); in 109 cases (10.9%) the clinical diagnosis was changed by the result of the pathological examination performed during the operation, and in many instances the surgical operation was modified according to the results of biopsy. In only one case was a definite diagnosis not possible. The patient concerned had had jaundice for the previous seven months and, recently, loss of weight, abdominal pain, and dyspnea. There was rigidity of the abdomen and evident guarding over the right hypochondrium. The clinical diagnosis was obstructive jaundice, rupture, or perforation of the biliary ducts. An exploratory laparotomy was performed, with excision of Vater's papilla. The biopsy performed during surgery demonstrated a chronic inflammatory process, but serial sections made later for more complete examination demonstrated the presence of a grade 2 adenocarcinoma (Broders), involved in abundant fibroblastic proliferation.

The pathological examination was indispensable for the exact diagnosis of the diseases of the breast in 25.6%, of the stomach in 12.6%, of the female genitalia in 9.1%, of the bones in 83.3%, of the thyroid in 9.3%, and of the mouth, tongue, throat, larynx, and frontal sinuses in 43.9%. The clinical and the pathological diagnoses coincided in the diseases of the breasts in 74.4%, of the stomach in 87.4%, of the female genitalia in 90.8%, of the bones in 16.7%, of the thyroid in 90.7%, and of the mouth, tongue, throat, larynx, and frontal sinuses in 56.1%.

**Roentgenological Changes in Small Intestine in Infectious and Parasitic Diseases.**—Drs. J. Rodrigues da Silva and Helio Morais, of the Rio de Janeiro Hospital dos Servidores, reported the results of their x-ray study of the small intestine in 95 hospital cases, in 74 of which there were symptoms caused, at least partially, by the following agents, alone or associated: Schistosoma mansoni (38 cases), Ascaris lumbricoides (30 cases), Trichuris trichiura (13 cases), salmonellae (10 cases), Endameba histolytica (8 cases), shigellae (6 cases), and Strongyloides stercoralis (4 cases). The rest of the patients (21) had no evidence

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of any parasitic or infectious disease, but their nutritional condition did not differ from that of the other patients, except for some digestive troubles that led to the diagnosis of irritable colon. The x-ray findings in the small intestine of patients having the aforementioned parasitic and infectious diseases were more frequently represented by changes in motility and tonus; hyperperistalsis and hypertonia were the most frequent findings; hypotonia and retardation of the transit were rare. In a few cases meteorism and mucus were present, but in only one case a slight abnormality of the mucosal pattern was reported in the jejunum. These roentgen changes were not characteristic with respect to each cause, contrary to what might be expected because of pathogenic differences. The only notable fact was a greater frequency of hypertonicity in patients with mansonic schistosomiasis. Silva and Morais could not confirm the presence of indisputably organic lesions already described by a few authors in cases of chronic amebiasis and shigelloses, nor could they find the changes that form the full picture of the so-called nutritional disturbances pointed out by some authors of works on mansonic schistosomiasis, intestinal parasites, shigelloses, and chronic salmonelloses.

The authors believe that it is not yet possible to interpret the exact mechanism of the roentgen changes found in the course of these parasitic and infectious diseases. They point out that the absence of roentgen changes with respect to the functions of the muscularis mucosae adds to the improbability of local factors as causative since such factors affect the muscularis mucosae more frequently than the muscularis propria. The occurrence of these same roentgen changes in patients with an irritable colon, without parasitic-infectious etiology, points to systemic factors as causative.

## COLOMBIA

**French Medical Mission.**—Drs. Paul Harvier, clinical internist; Joseph Logre, psychiatrist; Marc Richard Klein, neurosurgeon; Antoine Remond, electroencephalographist, and Guillaume Valetta, pharmacologist, were recently invited by the members of the National University of Colombia for a scientific "good will" trip to Colombia. The aforementioned invited members of the French medical mission arrived in Bogotá on March 27, 1951. They conducted an interesting scientific and social program for two weeks in Bogotá and one week each in Medellin and Cartagena. The program included lectures in the faculties of medicine of the aforementioned cities and clinical lessons on experimental and surgical demonstrations in hospitals. Many social festivities were organized to honor the French physicians. The main purpose of the mission was to strengthen the cultural and scientific relations between members of the French and Colombian medical profession.

**Phosphoric Esters of Thiamine in Diabetes Mellitus.**—The clinical and experimental results of administration of phosphoric esters of thiamine obtained by Drs. Gonzalo Montes Duque and Julio Cárdenas Araque were discussed in a previous foreign letter from Colombia (*J. A. M. A.* **144:**1394 [Dec. 16] 1950). Results of this treatment in four patients with diabetes mellitus are reported in *Revista de la Sanidad Militar de Colombia* (Nos. 3 and 4, Dec. 1950). Two were treated with phosphoric esters of thiamine (cocarboxylase) and the other two with the orthophosphate of thiamine. Both substances were given orally in daily doses varying from 400 mg. to 1 gm. The patients were observed for periods varying from four days to one and one-half months. In all patients glycosuria disappeared and the blood sugar returned to normal while the patients were taking the drugs, even if they did not have the proper diet. The authors believe that the phosphoric esters of thiamine aid in the phosphorilization of dextrose in the body, facilitating the effects of hexokinase. It is also possible that the aforementioned substances facilitate the passage of dextrose through the cellular membranes to be used by the cells. In an introductory note the authors state that they were informed by the workers of a well-known American laboratory that they were unable to reproduce the experimental results obtained in rabbits in the laboratory of the faculty of medicine of Bogotá.

# CORRESPONDENCE

## NATIONAL FOUNDATION FOR INFANTILE PARALYSIS

*To the Editor:*—On behalf of the National Foundation for Infantile Paralysis and the thousands of American families who support its fight against infantile paralysis, I want to thank the fine men and women in the various branches of the medical profession who served poliomyelitis patients so willingly and competently during 1950, the second highest year of polio incidence in the history of the United States.

The doctors, nurses, physical therapists, nonprofessional and volunteer hospital personnel—all who make up the polio medical team—deserve our warm tribute. They are the ones, in the final analysis, who can give the poliomyelitis patient the thing he seeks: an opportunity to return to his family and to his community a whole person. Through his acute illness and through the long re-education and rehabilitation period needed by the severely handicapped, the polio patient needs not only the skill of each member of the medical team, but also their personal interest, the strength of their encouragement, the understanding of his own problem which only they can give him. Unstintingly they have given this service to the poliomyelitis patient.

The American people who support the National Foundation make possible its program of providing financial aid to needy polio patients and of supplementing existing polio facilities and personnel in communities hit by epidemic. We can be successful, however, only in proportion to the cooperation we receive from hospitals and the many and varied personnel needed to serve the polio patient. Without their help we would not have been able to meet the heavy onslaught of polio in these past few years.

The National Foundation for Infantile Paralysis is deeply grateful to all those whose services helped to bring to each poliomyelitis patient his full chance for recovery.

Basil O'Connor, President,
The National Foundation for Infantile Paralysis, Inc.,
120 Broadway, New York 5.

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## MISMATCHED BLOOD TRANSFUSION

*To the Editor:*—In reference to the article "Successful Treatment of Mismatched Blood Transfusion," by Varney et al. (*J. A. M. A.* **145:**978 [March 31] 1951), I believe certain facts regarding hemolytic transfusion reactions should be noted. I do not believe alkalinization of the urine is of any use in the treatment of anuria due to so-called lower nephron nephrosis, nor do I believe precipitation of acid hematin is an important factor in the causation of this condition. It has been shown that overburdening of the patient with intravenous fluids, in the amount indicated in the case report, is a most frequent cause of cardiac failure, pulmonary edema, and death.

The important steps in the management of hemolytic transfusion reactions are first, relief of anoxemia by raising of the hemoglobin to normal values with transfusion of compatible whole blood or packed red blood cells; second, restriction of fluids to approximately 1,000 cc. per 24 hr. above the output; third, maintenance of electrolyte balance, the mode to be determined by carbon dioxide and serum potassium levels and electrocardiograms.

In the case reported, there was only transient oliguria with the development of little, if any, kidney damage. This, rather than the therapy used, is the explanation of the uneventful recovery.

Since the use of transfusion today is so routine, hemolytic transfusion reactions will be seen despite all precautions. Management of these reactions according to the method described in the article in question can lead only to disaster in most cases.

Leslie Hughes Tisdall, M.D.,
615 Third St., Brooklyn 15.

# BUREAU OF LEGAL MEDICINE AND LEGISLATION

## MEDICOLEGAL ABSTRACTS

**Workmen's Compensation Acts: Employee's Right to Change Physician.**—The claimant filed a proceeding to recover compensation payments for temporary total disability resulting from an industrial accident and for necessary medical and surgical expenses. From a finding in claimant's favor by the industrial commission, the employer appealed to the Supreme Court of Minnesota.

In May, 1945, while employed by the Oliver Iron Mining Company, the claimant was engaged in pulling a heavy piece of timber with a "come-along," a device with a wooden handle on each end and a pair of tongs in the center, used for dragging timber along the ground. While thus engaged, the "come-along" slipped out from the timber, and the employe fell backwards five or six feet onto an uneven pile of logs, striking his back and shoulder on the sharp edges thereof. He testified that as the result of the fall his back immediately commenced to pain all over and hurt him so much that he thought it was broken; that he lay on the timber at least 10 minutes before he could move and then got up and resumed work, but that the pain in his back continued thereafter. On the same date he reported the accident to his foreman and at the latter's direction, on the following day, the claimant went to the Shipman Hospital for examination and treatment by the company doctors. X-rays were taken, and one of the doctors, after feeling claimant's back and examining the x-ray, informed the claimant that the extent of his injuries appeared to be a bruise on his back some place around the ribs; and that the x-ray did not disclose anything further. During the next two years the claimant was in and out of the hospital five or six times, as the pain disappeared and recurred, but nothing specific was done for him. In March, 1947, still suffering pains in the lower part of his back, the claimant called upon a doctor of his own choice, Omer E. Snyker. Dr. Snyker immediately was impressed with the possibility of a spinal injury. He strapped the claimant's back and advised him of its proper use in working and lifting. The doctor testified that his later physical findings, which disclosed radiation of pain in employee's legs and nerve muscles, confirmed his earlier diagnosis of a possible spinal injury. He asked the claimant if he had sustained any accident, and was told of the fall which occurred on May 25, 1945. Dr. Snyker then recommended a spinogram x-ray and referred the claimant to Dr. Smith of St. Paul for such purpose. Before acting on his advice, however, the claimant endeavored to obtain relief from a local chiropractor. Unsuccessful in this, he returned to Dr. Snyker and in August, 1948, journeyed to St. Paul for the spinogram x-ray recommended by the latter. This was taken at Miller Hospital under the direction of Dr. Smith, who also made a physical examination of the claimant. Based on the spinogram and the physical examination, Dr. Smith concluded that the claimant was suffering from a herniated intravertebral disk pressing directly on the corresponding lumbar nerve and that the disk had already ruptured. On Aug. 27, 1948, Dr. Smith performed an operation on the claimant's back, removing segments of the perforated disk therefrom, following which claimant made an uneventful recovery. Dr. Smith testified that the fall which the claimant sustained in May, 1945, was, in his opinion, the cause of the ruptured disk for which he was treated and operated upon. Dr. Snyker testified likewise. Dr. Smith gave further testimony that many people experience disk injuries of this kind from a fall such as was disclosed by claimant; that ordinary X-rays are usually negative insofar as this type of injury is concerned, which was the reason for requiring a spinogram x-ray; that when the pain is due to a disk it may be temporarily relieved when the disk slips back into normal condition; that when the disk cannot resume its normal position the pain becomes constant; and that sometimes it is a matter of months before the disk gets out of position far enough to cause pressure sufficient to extend the pain to the leg of the injured person.

We believe, said the Supreme Court, that the evidence is amply sufficient to sustain the findings of the industrial commission that the claimant's injuries were due to the fall. It is the employer's contention, however, that the claimant was not authorized to change physicians without the consent of the industrial commission, and that hence it is not liable for the additional expenses thus incurred by the employee in effecting his cure.

The Workmen's Compensation Act provides: "The employer shall furnish such medical, surgical, and hospital treatment, . . . as may reasonably be required at the time of the injury, and during the disability, to cure and relieve from the effects of the injury. In case of his inability or refusal seasonably to do so the employer shall be liable for the reasonable expense incurred by or on behalf of the employee in providing the same. . . . The commission may at any time, upon the request of an employee or employer, order a change of physicians and designate a physician suggested by the injured employee or by the commission itself, and in such case the expense thereof shall be borne by the employer. . . ."

The statute thus indicates two separate situations in which a change of physicians furnished an employee under the act is permitted at the expense of the employer, pointed out the Supreme Court. In the first situation, the court continued, the statute does not specify that as a prerequisite to such a change an order therefore be procured from the commission. The inability or refusal of an employer or his physician to furnish the needed medical, surgical, or hospital treatment certainly would justify an employee in making an immediate change without jeopardizing his health or condition by even the slight delay involved in awaiting authorization therefor by the commission. In the second situation the statute contemplates that at the request of either employer or employee a change of physicians may be authorized by the commission in its discretion, even though the physicians furnished by the employer are providing proper medical treatment, since other factors, such as the convenience of parties, the location of required hospital facilities or medical equipment, the need for further specialized treatment, or many like considerations, may be deemed sufficient to authorize a change.

In a prior Minnesota case it was held, where physicians furnished by the employer for a period of more than 16 months "had fumbled and delayed the discovery of relator's real needs and requirements and had failed to furnish the professional aid really owed to realtor," that "the statutory equivalent of 'inability or refusal seasonably' to furnish and provide that which the statute requires" had been established. Based thereon the Supreme Court upheld the employe's right to change physicians at his employer's expense, even though the commission had failed to grant or act upon his request for such procedure.

In the present case, said the Supreme Court, the evidence establishing inability or refusal to furnish proper diagnosis and adequate treatment of the claimant's disability is even more substantial than in the prior case. Here, notwithstanding repeated visits by the claimant to his employer's physicians for a period of over 21 months, no proper diagnosis of his disability had been made and no adequate medical or surgical treatment provided therefor. The evidence established that a spinogram x-ray is required for proper diagnosis of a disk rupture, but no spinogram was suggested by employer's physicians. As far as the record indicates, there was never even a suspicion on the part of any of them that a disk rupture was the basis of claimant's disability. Dr. Snyker, on the other hand, on claimant's first call, suspected a spinal injury, while the diagnosis subsequently made by Dr. Smith after the spinogram x-ray quickly established claimant's need for immediate surgery, which was furnished and which shortly effected his cure.

We hold, the court concluded, that the evidence outlined was sufficient to establish the inability and refusal of employer's physicians to furnish the required treatment and to justify the claimant in seeking further medical attention from physicians and surgeons of his own choice; and that under the circumstances an order of the commission authorizing the change was not required. Accordingly the judgment in favor of the claimant was affirmed.—*Mattila v. Oliver Mining Co., 46 N.W. (2d) 82 (Minnesota 1951).*

# MEDICAL LITERATURE ABSTRACTS

## AMERICAN

### A.M.A. Arch. Internal Medicine, Chicago

87:329-476 (March) 1951


*Titrated, Regularly Spaced Radioactive Phosphorus or Spray Roentgen Therapy of Leukemias. E. E. Osgood.—p. 329.

*Studies on Antibiotic Synergism and Antagonism: Interference of Chloramphenicol with Action of Penicillin. E. Jawetz, J. B. Gunnison, R. S. Speck and V. R. Coleman.—p. 349.

Antistreptolysin O Response Following Hemolytic Streptococcus Infection in Early Childhood. L. A. Rantz, M. Maroney and J. M. Di Caprio. —p. 360.

Multilobar Pulmonary Venous Obstruction with Pulmonary Hypertension: "Protective" Arterial Lesions in Involved Lobes. J. E. Edwards and H. B. Burchell.—p. 372.

*Intermittent Peritoneal Lavage in Nephrectomized Dogs and Its Application to the Human Being. A. Grollman, L. B. Turner and J. A. McLean.—p. 379.

Diffuse Calcification of Pancreas. B. J. Peters, J. M. Lubitz and M. C. F. Lindert.—p. 391.

Syphilis: Review of Recent Literature. H. Beerman, L. Nicholas, W. T. Ford and M. S. Buerk.—p. 424.


**Irradiation Therapy of Leukemias.**—Osgood believes that the use of massive doses of ionizing radiation in the treatment of leukemia is irrational, since such doses do not kill all leukemic cells and do have many undesirable side effects. He favors the use of multiple small doses at regular intervals to inhibit leukemic cell growth without discomfort to the patient, and he fells that every leukemic cell must be irradiated at once. These concepts led to the development of the technique of "titrated," regularly spaced, total body irradiation by roentgen spray or radioactive phosphorous therapy. The roentgen therapy is given in the following manner: 200 to 400 kv.; no cone, 0.5 mm. Cu and 1 mm. Al filtration; 80-100 cm. target skin distance; two ports for adults. The initial dose is 10 to 20 r. The maximum subsequent dose is 25 r given at one to two week intervals for about six weeks. Subsequently 10 r per month is given for maintenance of control. Dosage is kept, if possible, below the level that produces anemia, bleeding, weight loss or any interference with the patient's daily routine. When $P^{32}$ is used, the initial dose is 20 to 40 μc. per kilogram of body weight and subsequent doses and time intervals, as with roentgen therapy, are determined by the patient's response, which may vary greatly. Since the half life of $P^{32}$ is eight days, dosage effects are cumulative if the interval is much less than six weeks. In the author's series of 58 patients (20 with chronic granulocytic leukemia and 38 with chronic lymphocytic leukemia) treated between 1941 and 1949 there are 32 still living. The mean duration of life from the onset of the disease is 3.6 years for the total series. While this is not significantly greater than the estimated 3.5 years natural life expectancy of patients with chronic leukemia, it is noteworthy that over 80 per cent of the total 208 years of leukemic life in this series was spent in essentially normal living.

**Antibiotic Synergism and Antagonism.**—Experiments in vitro with both gram-positive (Streptococcus) and gram-negative (Klebsiella) organisms and in vivo with streptococci in mice have demonstrated that chloramphenicol interferes with the bactericidal or therapeutic effect of penicillin. The antagonism extends over wide ranges of concentrations of the drugs, but these ranges are determined by the degree of antibacterial activity of each drug: for example, low, nonbacteriostatic concentrations of chloramphenicol do not inhibit the action of penicillin against Str. pyogenes, whereas high bacteriostatic concentrations of chloramphenicol do not interfere with the weaker action of penicillin on K. pneumoniae. These findings suggest that the two drugs do not interact in a chemical or physical way. This impression is confirmed by the observation that the antagonism occurs only if chloramphenicol is given prior to or simultaneously with penicillin. Apparently, chloramphenicol interferes only with the early bactericidal effect of penicillin, probably by modifying the characteristics of the bacterial population so as to make it less susceptible to penicillin. Drugs synergistic with penicillin, e. g., streptomycin or bacitracin, can overcome the antagonism between chloramphenicol and penicillin.

**Intermittent Peritoneal Lavage.**—Grollman and co-workers state that intermittent peritoneal lavage is superior to other artificial methods for removing excess waste products from the blood or adjusting the water, electrolyte, and acid base balance of the body. It is superior to the artificial kidney or exchange transfusions in that it requires no complex apparatus, cannulation of blood vessels, or large supplies of blood and it is less expensive and less dangerous. It also avoids the complex apparatus, multiple incisions, and constant attention required for constant peritoneal perfusion, and it may prove more effective. Intermittent peritoneal lavage has prolonged the life of nephrectomized dogs in good condition for 30 to 69 days, several times longer than by any other method, and has produced striking clinical improvement in three of five uremic patients. In man 2 or 3 liters of a special perfusing fluid are introduced into the peritoneal cavity through an ordinary paracentesis trochar or small plastic tube. The fluid is left in the peritoneum for two hours, then siphoned off through the same tube. This is repeated every two hours. Alteration of the composition and tonicity of the perfusing fluid alters the composition of the blood and the volume of the interstitial fluid. The addition of 25,000 units of sodium penicillin and 25 mg. of streptomycin to each liter of solution and the use of sterile technique prevents the development of peritonitis. In the authors' experiments there was no evidence of peritoneal irritation or decrease in the efficiency of the peritoneum as a semipermeable membrane many weeks after the procedure had been performed. The procedure may find application in conditions such as profound disturbances of water and electrolyte metabolism, pulmonary edema, and congestive failure not responding to usual therapeutic methods, and acute hypertensive encephalopathy.

### A.M.A. Arch. Otolaryngology, Chicago

53:243-352 (March) 1951


*Study of Long Term Hearing Results in Fenestration Surgery. L. E. Adin Jr. and G. E. Shambaugh Jr.—p. 243.

Physiological Principles in Rhinoplasty. S. Fomon, W. Y. Sayad, A. Schattner and H. Neivert.—p. 256.

Factors Influencing Late Secondary Hemorrhage Following Tonsilloadenoidectomy. W. K. Wright and L. G. Pray.—p. 277.

Submandibular Flap. J. G. Kostrubala and R. F. Stokes.—p. 285.

Lymph Vessels in Wall of Endolymphatic Sac. J. Arnvig.—p. 290.

Blastomycosis of External Auditory Canal (Blastomyces Dermatitidis). A. P. Keller Jr. and T. O. W. Meissner.—p. 296.

Sarcoma of Larynx. J. Lachmann.—p. 299.

Action of Dimenhydrinate (Dramamine) and Other Drugs on Vestibular Function. L. B. Gutner, W. Gould and R. C. Batterman.—p. 308.

Sedimentation of Aerosols in Interior of Sinuses. P. D. Ladouce. —p. 316.

Chronic Progressive Deafness and Otosclerosis. A. L. Juers, E. L. Derlacki and G. E. Shambaugh Jr.—p. 319.


**Long-Term Results of Fenestration Surgery.**—There has been some controversy about the permanency of the hearing improvement following the fenestration operation for otosclerosis and about the effect of the operation on the progression of the

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Titles marked with an asterisk (*) are abstracted.

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disease. The authors followed 390 patients for five to 10 years after this operation. The hearing of 70% of the patients showed significant, sustained improvement; 20% lost some of their initial gain but retained a usable level of hearing; 5% had no hearing improvement, and 5% were considered to have bony closures. The number of probable bony closures was reduced to 0.6% during the last two years by the use of most of the features of the "improved Northwestern University technique." Symptoms of inner ear disturbance suggesting labrynthine hydrops were noted in more than 10% of the patients postoperatively. Pregnancy following the fenestration operation did not seem to result in further cochlear nerve damage. Progressive cochlear nerve degeneration was noted much more frequently in ears not operated on than in ears operated on. The operation thus affords at least partial protection against future cochlear nerve degeneration. The mechanism of this protection is not known.

## American Journal of Clinical Pathology, Baltimore

**21:**201-300 (March) 1951

Heterophile Antibody in Normal Adults and in Patients with Virus Hepatitis. S. Leibowitz.—p. 201.
Pathogenesis of Salpingitis Isthmica Nodosa. C. L. Benjamin and D. C. Beaver.—p. 212.
Problems Concerned with Histologic Diagnosis of Tuberculosis of Lymph Nodes. J. R. McDonald and L. A. Weed.—p. 223.
Evaluation of Benzoyl Glucuronate Excretion Test (Snapper) for Liver Dysfunction. J. G. Sharnoff, M. Budnick and G. Jakab.—p. 234.
Resistance of Mycobacterium Tuberculosis to Chemotherapeutic Agents. W. H. Bailey.—p. 241.

## American J. Obstetrics and Gynecology, St. Louis

**61:**237-476 (Feb.) 1951. **Partial Index**

Epithelia of Pregnant Cervix. L. A. Carrow and R. R. Greene.—p. 237.
Myometrium and Leiomyomas in Endometrial Carcinoma: Failure of Involution and Reactivation of Smooth Muscle Tissue. S. Tannhauser.—p. 265.
Coning Biopsy in Detection of Early Cancer of Cervix: Survey of 500 Normal Women. S. B. Gusberg.—p. 276.
Total Abdominal and Vaginal Hysterectomy, Comparison. M. L. Leventhal and M. L. Lazarus.—p. 289.
*Posterior Colpotomy: Aid in Diagnosis and Treatment of Ectopic Pregnancy. C. C. Draa and H. C. Baum.—p. 300.
*Racial Incidence and Mortality of Ectopic Pregnancy. G. W. Anderson.—p. 312.
Histopathological Changes in Cervix Associated with Hyperplasia of Endometrium. A. R. Bainborough.—p. 330.
Analysis of Deaths Occurring in 5,318 Gynecologic Operations. J. P. Greenhill and H. M. Loeff.—p. 340.
Unanticipated Fetal Risks in Perineal Stage of Labor. J. A. Harrar and M. I. Buchman.—p. 348.
Prolapse of Umbilical Cord: Analysis of 116 Cases at Cincinnati General Hospital. K. R. Brandeberry and R. W. Kistner.—p. 356.
Cardiac Patient in Pregnancy: Five-Year Survey. L. H. Douglass and L. L. Hoopes.—p. 373.
True Toxemia of Pregnancy Occurring Before Third Trimester: Report of Three Cases and Review of Literature. T. W. McElin, J. E. Faber and L. M. Randall.—p. 379.
Validity of Vaginal Smear Diagnosis in Carcinoma in Situ of Cervix: Report of 60 Cases. R. R. Achenbach, R. E. Johnstone and A. T. Hertig.—p. 385.
Cerebral Effects of Papaverine Hydrochloride in Toxemia of Pregnancy. M. L. McCall, T. V. Finch and H. W. Taylor.—p. 393.
Analysis of Premature Delivery of Liveborn Infants. P. I. Bookstaver.—p. 399.
Morbidity After Total Abdominal Hysterectomy. J. H. Pratt, M. J. Lee Jr., W. F. Hasskarl Jr. and others.—p. 407.
Studies on Prematurity: III. Influence of Toxemia of Pregnancy on Fatality Rate. W. Pomerance and M. Steiner.—p. 436.
Viability of Cast-off Menstrual Endometrium. W. C. Keettel and R. J. Stein.—p. 440.

**Posterior Colpotomy in Ectopic Pregnancy.**—While in some patients a fairly definite diagnosis of ectopic pregnancy can be made from the history, physical examination, and laboratory observations, in most instances the presence of an ectopic pregnancy must be confirmed by surgical inspection of the site of pregnancy. Draa and Baum stress the value and safety of the posterior colpotomy incision. If insufficient endometrial scraping was obtained for diagnosis, the posterior cul de sac was opened and inspected for fresh or old blood. Then the tubes, ovaries, and uterus were inspected. If the ectopic pregnancy was an early one, it was usually removed. Occasionally, fibrinous adhesions would hold an early ectopic pregnancy against neighboring structures, but these often could be freed by gentle finger dissection. The diagnosis was established for 149 of the 224 cases of ectopic pregnancy by the use of the posterior colpotomy incision and in 77 of these the pregnancy could also be removed through the incision. Laparotomy was required 72 times after the posterior colpotomy incision, the ectopic pregnancies in this group being of longer duration. The posterior colpotomy incision will aid in diagnosis and prevent delay in treatment of extrauterine pregnancy and will also prevent unnecessary laparotomies. Although it is a simple, safe procedure, it has been used by few surgeons and has been condemned because of the danger of introducing infection into the peritoneal cavity. This has not been the experience of these authors.

**Incidence of Ectopic Pregnancy.**—In 19 hospitals within the population registration area of the city of Baltimore, the racial incidence of ectopic pregnancy in relation to total births during five years (1944-1948) was determined. The unreliability of individual hospital statistics was shown in variations of ratios of ectopic pregnancies to total births in white patients from 1: 111 to 1: 269 and in Negroes from 1: 31 to 1: 862. There was one ectopic pregnancy to 177 total births in white women, as compared to one ectopic pregnancy to 120 total births in Negro women. The mortality from ectopic pregnancy during the five year period was 0.7% for white patients and 3.9% for Negroes. In view of the high incidence of gonorrheal infection in Negro women, the conclusions would seem inescapable that the differential in racial incidence of ectopic pregnancy is attributable to a higher incidence of pelvic inflammatory disease in Negroes. If this is true, the more efficacious methods of treating gonorrheal infection now in widespread use may well lead to a reduction in the incidence of this frequent and grave complication of pregnancy.

## American Journal of Ophthalmology, Chicago

**34:**169-338 (Feb.) (Part I) 1951

*Visual Problems of Supersonic Speeds. V. A. Byrnes.—p. 169.
Phlyctenular Keratoconjunctivitis Among Alaskan Natives. M. H. Fritz, P. Thygeson and D. G. Durham.—p. 177.
Psychogenic Changes in Field of Vision: Associated with Tumors of Frontal Lobe of Brain. L. J. Gogela and C. W. Rucker.—p. 185.
Ocular Complications of Erythema Exudativum Multiforme. J. W. Duggan and S. R. Gaines.—p. 189.
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Sulfonamides in Treatment of Trachoma. S. Kamel.—p. 205.
Position of Risley Prism in Maddox-Rod Test. E. L. Green and R. G. Scobee.—p. 211.
*Chorionepithelioma of Choroid: Metastastic from Tumor in Testicle. M. M. Kulvin.—p. 217.
Specific Reading Disability: Problem in Integration and Adaptation. E. M. Cole.—p. 226.
Generalized Xanthomatosis with Corneal Involvement: Report of Case. B. Davidson, C. G. Pilz and R. W. Zeller.—p. 233.
Anomalous Retinal Correspondence: Its Essence and Its Significance in Diagnosis and Treatment. H. M. Burian.—p. 237.
Torsional Eye Movements. R. S. Hewitt.—p. 253.
Oblique Muscle Surgery from Anatomic Viewpoint. W. H. Fink.—p. 261.

**Visual Problems of Supersonic Speeds.**—Factors relating to the use of the eyes in the flying of aircraft at supersonic speeds are briefly outlined. The following problems are discussed: The optical effect of the shock wave and the effect of slanting surfaces on incident light; the effects of vibration on the eye and the effect of the delay in visual perception; the restricting visual effect of acceleration on the maneuverability of supersonic craft, and possible effects of temperature and high speed escapes on the eyes.

**Chorionepithelioma of Choroid.**—The occurrence of chorionepithelioma in the testicle is rare. Metastasis of such a tumor to the choroid is exceedingly rare. The case here presented concerns a man, aged 22, who, following removal of a testicle in which chorionepithelioma was found, received a course of irradiation to the groin. He was symptom free until almost one year later, when pain developed in the left upper quadrant of the abdomen. An exploratory operation revealed metastatic nodules in the liver. Dimness of vision developed 10 days later. The patient's

course was downhill, and he died two months after development of eye symptoms. Histological studies during necropsy corroborated the diagnosis of chorionepithelioma in the eye metastatic from the testicle. Only four other cases of this type in males have been presented in the literature.

## American Journal of Surgery, New York

**81**:147-258 (Feb.) 1951


*Pseudocysts of Pancreas. K. B. Brilhart and J. T. Priestley.—p. 151.
Kümmell's Disease. H. H. Steel.—p. 161.
Use of Prophylactic Penicillin in Obstetrics. L. T. Dorgan, H. S. McGaughey and H. G. Giddens.—p. 168.
Immediate Untoward Reactions to Spinal Anesthesia. C. S. Dwyer.—p. 172.
Perforation of Gallbladder. A. G. Fletcher Jr. and I. S. Ravdin.—p. 178.
New Approach for Subtrochanteric and Upper Femoral Shaft Fractures Using Dual Flange Nail Plate: Preliminary Report. E. L. Jewett.—p. 186.
Experiences with Postoperative Temperatures Above 108 F.: Use of Hypertonic Glucoses. J. L. Mangiardi.—p. 189.
Carcinoma of Breast: Review of 206 Cases. R. L. Sanders and R. M. Pool.—p. 193.
Partial Gastrectomy for Peptic Ulcer. A. H. Levy.—p. 198.
*Cystadenoma of Pancreas. A. A. Mozan.—p. 204.
End Result Study of McMurray Osteotomy for Acute Fractures of Femoral Neck. O. C. Hudson, W. P. Bartels and C. F. Freese.—p. 215.
Cancer of Stomach. S. E. Lawton, C. E. Fildes and L. Seidman.—p. 221.
Thumb Fractures and Dislocations: New Method of Treatment. D. Goldberg.—p. 227.


**Pseudocysts of Pancreas.**—Forty-four patients with pseudocyst of the pancreas were treated surgically at the Mayo Clinic during the years 1933 to 1947 inclusive. These cysts, which contain a semifluid material, are found adjacent to or occasionally within the pancreas. They may result from inflammation or trauma and do not have a lining epithelium, in contrast to a true retention type of cyst. Pseudocysts are one of the commonest types of cystic lesions of the pancreas. A patient with a cyst of this type has a history suggestive of recurring pancreatitis and has a rounded mass in the upper abdomen. The mass may change in size or at times disappear entirely. In this series incision and drainage was done in 19 of the 44 cases, incision and marsupialization in 12, complete excision in five, excision of cyst and partial pancreatectomy in three, partial removal of cyst in one, and no surgical treatment of cyst in four cases. At the Mayo Clinic it has been observed that unless unusually small, a pseudocyst does not lend itself to total excision, as it does not have the wall of a true cyst, is adherent to all surrounding structures, and may require an extensive operation for total extirpation. If complete removal were attempted in all cases, the operative mortality would be excessive. Internal drainage by anastomosis of the cyst to the stomach, gallbladder, or jejunum has been reported, but in most cases external drainage of adequate duration, preferably by marsupialization, if the cyst is large, appears to be the treatment of choice. Recurrence can generally be prevented. The danger of serious infection is minimal with irrigation and antibiotic therapy. Probably the main objection to this type of treatment is the prolonged care necessary while the cystic cavity is gradually being obliterated.

**Cystadenoma of Pancreas.**—A case is reported in which a benign cystadenoma of the pancreas was completely extirpated, and 56 cases collected from the literature are reviewed. Little is known of the etiology of pancreatic cystadenoma, and it occurs rarely. Cystadenomas are rounded, neoplastic masses with a coarsely lobulated surface. They vary from the size of a cherry to tumors as large as a football. They usually have a semitranslucent, fibrouslike, tense capsule. On palpation, they exhibit a tense, hard, nodular consistency. Their gross appearance may be likened to a mass of glass marbles set in a dense, rubbery substance. Sectioning reveals that the cystadenoma is usually multilocular, whereas the pseudocyst, which is the commonest among the pancreatic cysts, is usually unilocular or bilocular. Cystadenoma is a benign tumor, but its histopathological differentiation from cystadenoma carcinoma and multilocular cysts may at times be difficult. Clinically, cystadenoma is characterized by an insidious, slow growth. Later, a palpable tumefaction, abdominal pain in the upper epigastrium, dyspeptic symptoms and weight loss appear. Roentgen examination (with use of lateral plate technique) has proved a most valuable adjunct in diagnosis. Eight of the 56 cases had associated diabetes mellitus. The ratio of females to males was 7: 1. Complete surgical extirpation is the method of choice in the opinion of most authorities. The surgical mortality is about 13.6%. A plea is made to surgeons to keep in mind routine examination of the pancreas by palpation in the course of operations on the gallbladder, common bile duct, stomach, and duodenum. This procedure will afford him the opportunity to recognize the normal feel of the pancreas and thereby insure the disclosure of pathological disorders that would otherwise remain hidden.

## Annals of Allergy, Minneapolis

**9**:1-132 (Jan.-Feb.) 1951. **Partial Index**


*Adrenocorticotropic Hormone (ACTH): Its Effects in Atopic Dermatitis. T. G. Randolph and J. P. Rollins.—p. 1.
Therapeutic Effects of Antihistadine Decarboxylase and Antihistamine Combination. J. Schultz.—p. 15.
Treatment of Bronchial Asthma with Pregnenolone Acetate. A. O. Lima.—p. 31.
Use of Antihistaminic Drugs in Treatment of Epidermophytosis of Feet and Epidermophytids: Preliminary Report. E. Austin.—p. 50.
Evaluation of Solid ("Dust") Aerosols as Therapeutic Agents. M. S. Segal, H. J. Rubitsky, E. Bresnick and L. Levinson.—p. 53.
Role of Questionnaire in Diagnosis of Allergic Conditions. E. A. Brown.—p. 60.
Toxic Cutaneous Manifestations of Para-Aminobenzoic Acid Derivatives. G. J. Greenwood.—p. 72.
Benadryl—Its Uses in Narcotic Withdrawal Syndrome and in Other Conditions. M. Vaisberg.—p. 74.
Injections of Massive Doses of Pollen Extract at Three-Week Intervals and Their Effect on Skin-Test Sensitivity. H. I. Shahon, A. H. Lappin, V. Agranat and others.—p. 77.
Skeptophylactic Smallpox Vaccination in Children: Immunity Without Morbidity. J. G. Little.—p. 85.
Dermatitis Due to Para-Aminosalicylic Acid. E. J. Luippold.—p. 97.
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Symptoms of Hay Fever Caused by Algae: II. Microcysts, Another Form of Algae Producing Allergenic Reactions. H. A. Heise.—p. 100.
Effects of Antihistaminic Drugs on Antigen-Antibody Reaction During Anaphylactic Shock. V. Traina.—p. 102.
Pollinosis with Intense Pruritus Vulva. R. M. Mulligan.—p. 104.
Hay Fever: Review of Literature of 1949. M. A. Kaplan and N. J. Ehrlich.—p. 105.


**Adrenocorticotropic Hormone in Atopic Dermatitis.**—The beneficial effects of pituitary adrenocorticotropic hormone (ACTH) in bronchial asthma, ragweed hay fever, and other allergic disturbances prompted a study of its effect in atopic dermatitis. Patients were selected on the basis of typical acute dermatitis that had failed to respond completely to specific allergic management. Aggravation of the dermatitis could be induced following the ingestion of one or more known allergenic foods. Three patients were hospitalized, and acute exacerbations of their dermatitis were induced by the ingestion of foods to which they were known to be sensitized. Although allergenic foods were continued in their diets, each showed rapid clearing of the lesions of atopic dermatitis during short courses of pituitary adrenocorticotropic hormone therapy. This degree of improvement lasted four or five days following the cessation of treatment with the hormone in two of the patients in whom allergenic foods were continued in the diet. Another patient was managed similarly, except that allergenic foods were withdrawn from the diet coincident with the cessation of hormone therapy; his clinical improvement lasted 10 days. The fourth patient, of whom relatively less was known from the standpoint of specific food allergy, was treated with pituitary adrenocorticotropic hormone for three weeks; during the latter part of this interval the dosage of the hormone was gradually reduced. Although his diet was constant, dermatitis recurred two days after the cessation of therapy, but the recurrence was less abrupt and pruritus was less severe during the first 10 days of gradually recurring eczema. Each patient had a recurrence of dermatitis following the cessation of hormone therapy, at least as severe and in some instances more acute than that present for several weeks prior to the institution of treatment. This degree of severity persisted from one to three weeks and then reverted to the previous status. In general, the results of treatment with pituitary adrenocorticotropic hormone in atopic dermatitis are not as good as in hay fever and bronchial asthma.

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## Archives of Physical Medicine, Chicago

32:71-120 (Feb.) 1951

*Experimental Study of Effects of Ultrasonic Energy on Lower Part of Spinal Cord and Peripheral Nerves. T. P. Anderson, K. G. Wakim, J. F. Herrick and others.—p. 71.
Head Traction Attached to Corset in Care of Scoliosis. R. L. Bennett.—p. 84.
Fitting and Alinement of Braces for Lower Extremities. O. F. von Werssowetz.—p. 90.
Use and Abuse of Physical Medicine in Treatment of Peripheral Vascular Diseases. A. G. Prandoni.—p. 100.

**Effects of Ultrasonic Energy on Spinal Cord and Nerves.**—The question of the effects of ultrasonic energy on the nervous system has arisen because this type of energy has been used for disorders, such as sciatica and lumbago, that involve the nervous system. Paralysis was observed in laboratory animals after single applications of ultrasonic energy to the midline of the back given in practically the same manner as the recommended therapeutic application in cases of lumbago and sciatica. In further experiments on dogs and rats, with use of a sonostat, which generates sound vibrations at a frequency of 800,000 cycles per second, it was found that ultrasonic energy had much greater destructive effect on the spinal cord than on the sciatic nerve. The theory that there is an effect of ultrasonic energy on nerve tissue other than its heat effect is supported by two findings: (1) the occurrence of marked destruction of the cord when temperatures recorded in the spinal canal were as low as 42 to 43 C. after application of ultrasonic energy and (2) the occurrence of much less regular myelin degeneration in sciatic nerves with action potential completely blocked by ultrasonic energy than in those with action potential similarly blocked by direct heating. Whether ultrasonic energy can be safely used for therapy cannot be determined from this study. Perhaps a safe procedure for the therapeutic application of ultrasonic energy can be determined by further studies, if the moving technique of application (or pulsed energy) and smaller doses are used.

## California Medicine, San Francisco

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Treatment of Difficult and Involved Colles' Fracture. F. J. Cox and A. W. Meier.—p. 81.
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Nutritional Status of the Aging: Public Health Aspects. H. D. Chope and S. Dray.—p. 105.
Refrigeration Treatment of Chronic Osteomyelitis. R. Bingham.—p. 108.
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Coccidioidomycosis as Complication of Pregnancy. J. E. Vaughan and H. Ramirez.—p. 121.
Mephenesin as Relaxing Agent in Treatment of Tetanus: Clinical Experience in 12 Cases. H. E. Godman.—p. 126.
Dental Caries. G. O. Boucher.—p. 128.

## Delaware State Medical Journal, Wilmington

23:27-52 (Feb.) 1951

Achalasia Treated by Transabdominal Esophagogastrostomy: Case Report. H. S. Rafal and J. J. Selinkoff.—p. 27.
Esophagocardiomyotomy for Intractable Achalasia. H. R. Hawthorne and H. C. Davis.—p. 32.
*Effects of 17-Ketosteroid Deficiency and Male Hormone Therapy in Rheumatic Fever and Arthritis. C. W. Dunn.—p. 36.
Use of Dimethylyn in Management of Certain Symptoms of Menopause. G. J. Boines.—p. 41.

**17-Ketosteroid Deficiency and Male Hormone Therapy in Rheumatic Fever and Arthritis.**—Dunn called attention to the role of endocrine deficiency and the value of endocrine therapy in arthritis as early as 1940. In 1950 he performed routine endocrine examination on 17 boys (6 to 14 years of age) who were receiving convalescent care for rheumatic disease and found that three-fourths of them showed signs of severe hypogonadism. A group of 17 adult males who had arthritis showed an 88% incidence of low 17-ketosteroid content in their urine. A group of 30 women with arthritis showed a 66% incidence of reduced 17-ketosteroid content in their urine. Of two male children with rheumatic fever and arthritis, one was given male hormone therapy, and his recovery was dramatic; in the control patient, the illness ran the usual course. Both had been given routine antirheumatic therapy in the form of antibiotics, ascorbic acid, and salicylates. The 17-ketosteroid deficiency seems to produce an inferior constitutional environment which permits the unknown etiologic factor of rheumatic fever to invade the impaired collagen tissue structures in the fibromuscular, articular, and para-articular structures. Therapy with 17-ketosteroids in the form of testosterone propionate and methyl testosterone is indicated in the treatment of rheumatic fever and arthritis whenever a 17-ketosteroid deficiency is apparent. Hypogonadal male children should receive male hormone therapy earlier and in larger dosage. There seems to be no contraindication to the use of male hormone therapy in females with rheumatic fever. The beneficial effects of cortisone and pituitary adrenocorticotropic hormone in rheumatic fever and rheumatoid arthritis illustrate the value of ketosteroid therapy in arthritis.

## Endocrinology, Springfield, Ill.

48:125-244 (Feb.) 1951. **Partial Index**

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Effect of Steroids and Lactone Derivatives on Hypophyseal Gonadotrophin Content. G. E. Mortimore, C. A. Paulsen and C. G. Heller.—p. 143.
Studies with Labelled Anterior Pituitary Preparations: Adrenocorticotropin. M. Sonenberg, A. S. Keston and W. L. Money.—p. 148.
Influence of Thyroid on Cerebral Metabolism. J. F. Fazeks, F. B. Graves and R. W. Alman.—p. 169.
Some Observations on Physiologic Activity of Delta 4,6-Dehydrocortisone (Diene). G. M. Higgins, K. A. Woods and E. C. Kendall.—p. 175.
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Influence of Sex and of Testosterone Upon Fatty Liver Due to Ethionine. E. Farber, D. Koch-Weser and H. Popper.—p. 205.
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Comparison of Urinary Estrogens Determined Biologically and of "Estroids" Determined Chemically. F. D. Humm, P. L. Munson and W. T. Salter.—p. 225.

## Iowa State Medical Society Journal, Des Moines

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Primary Cancer of Lung. T. J. Kinsella.—p. 37.
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Peritoneoscopy. P. G. Keil and S. N. Landis.—p. 48.
Wills for Physicians. W. F. Waugh.—p. 50.

41:71-108 (March) 1951

Metabolic and Nutritional Studies in the Adolescent. J. A. Johnston.—p. 79.
*Folic Acid Antagonists in Treatment of Leukemia. A. B. Hendricks and W. M. Fowler.—p. 84.
Management of Lacrimal Duct Obstruction. C. A. Noe.—p. 86.
Stenosis of Pulmonary Conus Without Associated Defects: Case Report. E. O. Theilen and L. E. January.—p. 88.

**Folic Acid Antagonists in Leukemia.**—Ten patients with acute leukemia were subjected to a therapeutic trial with two of the folic acid antagonists, namely, 4-aminopteroylglutamic acid (aminopterin) and amethopterin (4-amino-$N^{10}$-methyl folic acid). The daily dose of aminopterin varied from 0.5 to 2 mg. with a total dose of 6 to 11 mg. A daily dose of 5 mg. of amethopterin was given for six to 11 days. Results were satisfactory but temporary in three patients, fair in three, and poor in four. The drugs appeared to be most effective in subacute lymphocytic leukemia and ineffective in the acute fulminating type. They produce only temporary remissions and do not cure leukemia. Folic acid antagonists are toxic to the patient, and daily leukocyte counts, platelet counts, and frequent checks of the bleeding and clotting time are desirable. Manifestations of toxicity, such as stomatitis, bleeding from the bowel, and thrombopenia necessitated discontinuance of the folic acid antagonists in three patients.

## Journal of Gerontology, St. Louis

6:1-104 (Jan.) 1951. **Partial Index**

Studies in Experimental Atherosclerosis: I. Preparation of Injectable Cholesterol Sols. O. J. Pollak and B. Wadler.—p. 1.
Serum Alkaline Phosphatase in Middle and Old Age. L. C. Clark Jr., E. I. Beck and N. W. Shock.—p. 7.
Vitamin Studies in Middle-Aged and Old Individuals: VI. Tocopherol Plasma Concentrations. M. Chieffi and J. E. Kirk.—p. 17.
Nitrogen Balance Studies in Four Elderly Men. W. B. Kountz, L. Hofstatter and P. G. Ackermann.—p. 20.

## Journal Lab. and Clinical Medicine, St. Louis

37:331-498 (March) 1951

Induced Pregnancy in Mammalian Host Following Severe Total Body X-Irradiation. P. E. Rekers.—p. 331.
Blood Volume Determination: Comparison of T-1824 and $P^{32}$ Labeled Red Cell Methods. L. R. Wasserman, Tse-Fei Yoh and I. A. Rashkoff.—p. 342.
Method for Continuous Recording of Evans Blue Dye Curves in Arterial Blood, and Its Application to Diagnosis of Cardiovascular Abnormalities. J. W. Nicholson III, H. B. Burchell and E. H. Wood.—p. 353.
*Comparative Effects of Ether, Alcohol, Tetraethylammonium, and Priscoline in Producing Vasodilatation in Peripheral Vascular Conditions. W. J. Reedy.—p. 365.
Precipitation of Cerebrospinal Fluid Globulin by Zinc Sulfate. A. M. Donovan, J. M. Foley and W. C. Moloney.—p. 374.
Primary Atypical Pneumonia with High Titer of Cold Hemagglutinins, Hemolytic Anemia, and False Positive Donath-Landsteiner Test. F. L. Neely, W. H. Baria, C. Smith and C. F. Stone Jr.—p. 382.
Comparative Evaluation of Several Complement Fixation Techniques for Laboratory Diagnosis of Rickettsioses. J. H. Schubert, S. M. Stanford and E. J. Tiffany.—p. 388.
Effect of Prolonged Administration of Antibiotics on Human Fecal Flora. H. R. Bierman and E. Jawetz.—p. 394.
*Polymyxin B and Polymyxin E: Clinical and Laboratory Studies. B. M. Kagan, D. Krevsky, A. Milzer and M. Locke.—p. 402.
Variable Effect of Atropine Sulfate on Fasting Gastric Secretion in Man. E. Levin, J. B. Kirsner and W. L. Palmer.—p. 415.
Reducing Substance in Urine of Patients Treated with Para-Aminobenzoic Acid. C. J. D. Zarafonetis and J. P. Chandler.—p. 425.
Alterations in Plasma Proteins, Plasma Volume, and Volume of Packed Red Cells in Patients Receiving ACTH or Cortisone. B. V. Jager, H. Brown and M. Nickerson.—p. 431.
Effect of Adrenocorticotrophic Hormone (ACTH) in Idiopathic Acquired Hemolytic Anemia as Related to Hemolytic Mechanisms. F. H. Gardner, A. E. McElfresh, J. W. Harris and L. K. Diamond.—p. 444.
Effect of ACTH on Leukocyte Counts in White Mice. E. H. Kass, M. M. Lundgren and M. Finland.—p. 458.
Influence of ACTH on Course of Experimental Influenza Type A Virus Infection. C. G. Loosli, R. B. Hull, B. S. Berlin and E. R. Alexander.—p. 464.

**Effects of Drugs in Producing Vasodilatation.**—Several drugs were tested for their immediate vasodilating action following a single intravenous injection in 16 patients, including 11 with arteriosclerosis of the lower extremities, one with arteriosclerotic endarteritis obliterans of the upper extremities, and four with vasospastic disorders of the lower extremities. Fifteen of these patients were given 75 mg. of 2-benzyl-2-imidazoline hydrochloride (priscoline®), 11 received 500 mg. of tetraethylammonium (etamon®) chloride, six received ethyl alcohol, and six received ether, 25 cc. in one-half liter of a 5% dextrose or isotonic sodium chloride solution. The intravenous infusion of 5% ether solution had a minimal effect on digital cutaneous blood flow, as measured by determination of skin temperature. The intravenous 5% alcohol infusion produced vasodilatation in one patient with vasospastic disturbances of the lower extremities but produced no rise in skin temperature in four patients with arteriosclerotic peripheral vascular disease. The administration of intravenous tetraethylammonium appeared to have a weak effect on increased cutaneous blood flow, as measured by skin temperature determinations. The effect was minimal and inconstant. Results suggested that tetraethylammonium is not a sufficiently potent agent for use in estimation of the degree of vasoconstriction in peripheral vascular disorders. The single intravenous injection of priscoline® appeared to be effective in relieving the component of abnormal vasoconstriction associated with arteriosclerotic obliterative vascular disease and in relieving vasospastic disorders. It was the most consistent and most effective vasodilator of the several agents used in this study. The presence of arteriosclerosis in the extremities does not necessarily indicate arterial insufficiency, but if this insufficiency is demonstrated to be present, then the use of vasodilating agents may clearly indicate to what extent it is due to organic occlusive changes. In addition to the demonstration of arteriosclerosis, the absence of palpable pulsations and decreased oscillometric excursions may not indicate occlusive organic arterial disease alone but may reflect abnormal vasoconstriction in the presence of sclerotic vessels. If there is no surface temperature response to the intravenous administration of priscoline,® it is probable that the arterial insufficiency is due to organic occlusion of the vessels as a result of thrombosis or mechanical block. The drug is offered as a test agent to aid in separation of the element of vasoconstriction from the mechanical obliteration of the lumen.

**Polymyxin B and Polymyxin E.**—In vitro tests showed that both polymyxin B and polymyxin E had a pronounced effect against some of the gram-negative pathogenic bacteria, which did not respond well either clinically or in vitro to any of the other presently available drugs. Polymyxin B and polymyxin E were given a therapeutic trial in 36 patients, 30 infants and children, and six adults, 22 with urinary tract infections, one with infection of both the urinary tract and the blood stream, nine with gastrointestinal infections, two with pulmonary infections, one with chronic otitis media, and one with meningitis. The infants and children were given 0.8 mg. of the drug per kilogram of body weight every four hours. All the adults were given the maximum dose of 20 mg. every four hours intramuscularly. Results showed that infections that may not respond to other less toxic drugs or antibiotics and for which polymyxin may be useful are those due to Escherichia coli, Aerobacter aerogenes, Pseudomonas aeruginosa, Shigella and Hemophilus influenzae. Polymyxin B appeared to be less toxic than polymyxin D. The principal evidences of toxicity due to polymyxin D were renal; those due to polymyxin B and E were neurological and allergic. The neurotoxic signs included weakness, drowsiness, ataxia, numbness of fingers and feet, impaired position sense, transient blurring of vision with diplopia, and nystagmus. All of these were usually mild and transient. Other evidences of toxicity were intense itching, especially about the mouth and face, feeling of very tight skin about the face, chilly sensations, sweating, and urticarial and maculopapular rashes. The latter symptoms were much relieved by tripelennamine (pyribenzamine®) hydrochloride. Most patients complained of moderate to pronounced pain at the site of the injection. The evidences of toxicity were much less pronounced in infants and children than in adults. Polymyxin is the most effective drug against serious infections due to most strains of Ps. aeruginosa. The drug should be considered also in infections due to other sensitive gram-negative bacteria that are resistant to other less toxic agents.

## Laryngoscope, St. Louis

61:99-185 (Feb.) 1951

Embryonic Hearing Organs After Maternal Rubella. L. A. Schall, M. H. Lurie and G. Kelemen.—p. 99.
Acute Laryngotracheobronchitis: Analysis of 1,175 Cases with 98 Tracheotomies. A. R. Everett.—p. 113.
Third Statistical Study of Auditory Tests in Relation to Fenestration Operation. W. R. Thurlow, H. Davis, T. E. Walsh and E. Eldert.—p. 124.
*Headache and Vertigo Associated with Hypoglycemic Tendency. J. A. Harrill.—p. 138.
More Complete Adenoidectomy to Overcome Interference with Nasal Breathing by Salpingonasal and Salpingopalatine Folds. E. Reeves and R. Brill.—p. 146.
Laryngeal Granuloma Following Intratracheal Anesthesia: Report of Four Cases. R. Peimer and S. S. Feuerstein.—p. 165.

**Headache and Vertigo Associated with Hypoglycemic Tendency.**—Headache, and to a lesser extent vertigo, are common symptoms of patients with spontaneous hypoglycemia. The case histories of 72 patients complaining of headache or vertigo and whose symptoms were relieved by high protein diet were reviewed. In all patients the symptoms were reproduced or aggravated during the five hour dextrose tolerance test, which, in most instances, gave a low curve, especially from the second through the fifth hour. In only 15 patients did the fifth hour level reach the fasting level, and in seven of these 15 the curve was flat. Symptoms were usually produced when the level dropped to 70 or less; in others, the rapidity of the fall of the sugar levels appeared to be the important factor. The headache

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experienced is visceral in character and is described as being dull and throbbing. It is often present at night and may be related to meals. Patients respond well to a diet high in protein and low in carbohydrates. Supplementary feedings may be necessary.

## Minnesota Medicine, St. Paul

34:105-192 (Feb.) 1951. **Partial Index**

Significant Developments in Blue Cross and Blue Shield. A. M. Calvin. —p. 133.
Appendicitis: Failure to Correlate Clinical and Pathologic Diagnoses; a Surgeon's Viewpoint. R. L. Gorrell.—p. 137.
Appendicitis: Failure to Correlate Pathologic and Clinical Diagnoses; a Pathologist's Viewpoint. A. H. Wells.—p. 139.
*Dangers of Penicillin Therapy in Syphilis of the Central Nervous System; with Special Reference to Occurrence of Delayed Reactions. S. K. Shapiro and B. Berris.—p. 141.
Peripheral Neuritis Due to Polycythemia Vera. W. Chalgren and D. R. Johnson.—p. 145.
Trauma to Urethra and Bladder in Association with Pelvic Fractures. E. J. Richardson.—p. 148.
Arrhenoblastoma: Report of Case with Normal Pregnancy During Remission and Two Subsequent Normal Pregnancies After Surgical Removal. P. F. Eckman.—p. 152.

**Penicillin Therapy in Syphilis of Central Nervous System.**—Ten patients with neurosyphilis and one patient with tertiary syphilis of the skin were treated with penicillin according to the following schedule: from the first to the fifth day respectively, doses of 5,000, 10,000, 20,000, 50,000, and 100,000 units of penicillin were injected intramuscularly every three hours. From the fifth to the fourteenth day, patients received 100,000 units intramuscularly every three hours, and an additional 1,000,000 units of penicillin dissolved in 500 cc. of isotonic saline was administered daily intravenously. As controls, six nonsyphilitic patients were treated in a similar way. Eight of the 11 syphilitic patients had toxic reactions, all delayed in type. These reactions occurred on various days during the intravenous treatment. Symptoms were malaise, headache, nausea, chilly sensation, and temperature elevation. Two patients also had exacerbation of syphilitic symptoms. Two patients (one with pulmonary complications) succumbed after institution of the therapy. Three of the six control patients had systemic reactions: headache, malaise, chills, and fever. In all but one patient, the onset of the reaction followed intravenous injection of penicillin by one to three hours. In all patients, including controls, reactions occurred only after intravenous administration, but it is possible that the increasing intramuscular dosage that preceded it sensitized the patients and accentuated the reactions. Another possibility is that penicillin might have a direct neurotoxic effect, as suggested by the fact that delayed reactions occurred in the control group. However, exacerbation of specific syphilitic symptoms in four syphilitic patients suggests that another mechanism was operating, separately or in combination with the above. Severity of toxic reactions contraindicates the use of combined intramuscular and intravenous administration of penicillin in the schedule described, in treatment of neurosyphilis.

## New England Journal of Medicine, Boston

244:275-314 (Feb. 22) 1951

Bilateral Thyrotomy for Carcinoma of Larynx. J. I. Kemler.—p. 275.
*Cardiovascular Manifestations in Acute Poliomyelitis. L. Weinstein and A. Shelokov.—p. 281.
*Analgesic Effect of Dromoran Hydrobromide (3-Hydroxy-N-Methyl Morphinan Hydrobromide) in Postoperative Pain. E. Keutmann and F. F. Foldes.—p. 286.
Q Fever: Report of Case in Massachussets. F. P. Vose.—p. 288.
Medicine as Social Instrument: Public Health. H. Emerson.—p. 289.

**Cardiovascular Manifestations in Acute Poliomyelitis.**—The incidence and character of cardiovascular disturbances were studied in 428 patients with acute poliomyelitis. Since 50% of the patients were adults, it was possible to compare the relative frequency of disturbances in the heart and blood vessels of persons of all age groups. Abnormalities of the electrocardiogram, including high-peaked, notched T waves, increase in P-R and Q-T intervals, a $Q_3$ $T_3$ pattern, T wave inversions in leads other than 3, depression of the S-T segment, and a $Q_1$ $T_1$ pattern were observed. In every case, the normal electrocardiographic patterns reappeared as the patients recovered from the acute phase of poliomyelitis. Thirty patients, eight less than 16 years old and 22 aged over 16, had prolonged elevation of blood pressure during their illness. Its development in most cases was probably related to hypoxia. Return to the normotensive state could be produced by establishment of a clear airway, overcoming of respiratory failure by various mechanical means or administration of oxygen. Myocarditis developed oftener and was severer in older patients than in young patients. The mild form is probably hypoxic in origin, whereas the severe form may be due to invasion of the heart by the virus. Pulmonary edema was revealed by necropsy in four of 16 fatal cases of the bulbar forms of poliomyelitis. Careful management of fluid intake in patients with bulbar disease is necessary. Intravenous hydration is probably best avoided. In one case sterile verrucous endocarditis was revealed by necropsy. The authors' observations as well as others cited in the literature support the growing concept of poliomyelitis as a diffuse disease rather than one limited to the anterior horn cells of the spinal cord. That damage may be produced in structures outside the nervous system is strongly suggested by the observation of severe myocarditis. The problem of the cardiovascular disturbances in poliomyelitis needs further study.

**Analgesic Effect of Dromoran® in Postoperative Pain.**—The analgesic effect of dromoran® hydrobromide (3-hydroxy-N-methylmorphinan hydrobromide), a new synthetic morphine analogue, in postoperative pain was compared with that of morphine sulfate in 623 surgical patients. Dromoran® hydrobromide (5 mg.) and morphine sulfate (10 mg.) were administered subcutaneously to 311 and 312 patients respectively. The first postoperative dose of dromoran® gave complete relief in 66.5% of the patients as compared to 46.2% with morphine. Following a total of 1,336 injections of dromoran,® complete relief was obtained in 75% of the patients, the average total number of injections per patient being four. After a total of 1,097 injections of morphine, complete relief was obtained in 54.7% of patients, the average number of injections per patient being 3.4. The average duration of analgesia produced by 5 mg. of dromoran® was 6.1 hours as compared to 5.8 hours with 10 mg. of morphine. The incidence of nausea and emesis was less with dromoran® than with morphine.

## New York State Journal of Medicine, New York

51:561-688 (March 1) 1951

Clinical Comparison of Alpha-Estradiol and Conjugated Estrogens in Treatment of Menopausal Syndrome. N. B. Reicher, C. E. Clark and E. Bechtold.—p. 601.
Chemically Active Air Pollutants. I. R. Tabershaw.—p. 607.
Evaluation of Morusul in Treatment of Varicose Veins. N. Berg. —p. 610.
Use of Bacitracin-Tyrothricin Ointment in Treatment of Pyogenic Dermatoses. I. I. Lubowe.—p. 611.
Suppuration of Salivary Glands in the Newborn. I. N. Kugelmass. —p. 613.
*Intrasynovial Procaine for Symptomatic Relief of Osteoarthritis. H. Berger.—p. 615.
New Lange Colloidal Gold Test in Psychiatry. N. E. Stein, L. deMello and B. Dattner.—p. 617.
Use and Abuse of Antibiotics in Treatment of Localized Pilonidal and Perirectal Suppurations. R. Turell.—p. 619.
Observations in Sterility. J. S. Beilly and M. W. Greenberg.—p. 621.
Moderate Doses of Estrogen and Thyroid in Prevention of Abortion. J. Brimberg, N. H. Hass, M. G. Drimer and C. C. Weitzman.—p. 623.
Delay in Cancer Diagnosis. W. S. Wiggins, M. F. Hilfinger and L. G. Berman.—p. 626.
Administrative Aspects of BCG Vaccination Clinic for Newborns: Preliminary Report. E. G. Cermak and K. Birkhaug.—p. 629.
Inferior Vena Cava Ligation for Prevention of Recurrent Pulmonary Embolism. F. R. Cole.—p. 633.
Postspinal Headache in Obstetrics. J. Halperin and A. Bellwin.—p. 635.
*Estradiol Pellet Implantation in Carcinoma of Prostate. M. V. Okie, M. L. Carden, H. J. McGee and E. M. Tracy Jr.—p. 637.
A 14-Year Survey of Parturient Ruptured Uterus at the Harlem Hospital. L. B. Posner, D. F. Smith and H. L. Trambert.—p. 641.

**Procaine Hydrochloride in Osteoarthritis.**—Fourteen patients with osteoarthritis of one or both knees had unsatisfactory results from procaine hydrochloride administered intravenously, either because pain was not relieved or reappeared rapidly, or because of unpleasant toxic effects or mechanical difficulties. Following this, 10 cc. of 2.5 to 3% procaine hydrochloride were injected by intrasynovial route into the involved joint and the patients were followed for a period of four months to one year. All were improved, and some were completely relieved. One

resumed his occupation as a track walker, covering several miles daily, and another resumed her trade of retail grocer, in which she spends long hours daily on her feet without pain. The results were so satisfactory that recently five patients who had not received procaine hydrochloride intravenously were so treated intrasynovially with equally gratifying results. This would negate the possible conclusion that this improvement was due to delayed action of previous intravenous administration of procaine hydrochloride.

**Estradiol Pellet Implantation in Carcinoma of the Prostate.**—Nine patients between the ages of 50 and 74 with prostatic carcinoma were treated by subcutaneous implantation of 50 mg. pellets of alpha-estradiol every three to four months. This type of administration was not associated with the undesirable gastrointestinal effects that orally administered estrogenic compounds often produce. Subcutaneous administration assures a constant source of supply, in contrast to oral administration, which may be interrupted by forgetfulness, indifference, or other factors. Results were eminently satisfactory. Relief from pain was prompt and in most cases complete. The patients were maintained in optimal state, free from pain, gastric distress, and breast hypertrophy. Progression of the prostatic tumor and of metastases was retarded. Cachexia of advanced carcinoma was frequently reversed, with substantial gains in weight, increase in strength, and return to gainful occupation. Two patients, who were first seen in advanced stages, died. It is suggested that a sustained high level of circulating estrogenic substance has been responsible for the pronounced efficiency of the alpha-estradiol pellets used in the authors' cases.

## Northwest Medicine, Seattle

**50:**73-144 (Feb.) 1951

Early Care of Traumatic Wounds of Face. C. E. Gurney and V. V. Lindgren.—p. 92.
Perforated Peptic Ulcers. W. H. Tousey.—p. 95.
*Physiologic Position for Delivery. F. H. Howard.—p. 98.

**50:**145-228 (March) 1951

The Future of Medicine. J. W. Cline.—p. 165.
Cardiac Catheterization—Diagnostic Aid in Congenital Heart Disease. J. H. Lehmann, A. D. Johnson, W. C. Bridges and others.—p. 170.
Newer Concepts in Rheumatoid Arthritis. K. K. Sherwood and B. Zimmerman.—p. 176.
Rh Factor in Obstetrics. M. S. Sichel.—p. 181.

**The Physiological Position for Delivery.**—The conventional positions now generally in use in obstetrics are the modified lithotomy position, with the patient on her back, and to a lesser extent the Sims position, wherein the patient reclines on her side, the upper knee being drawn up to the abdomen. Most lecturers in obstetrics pass lightly over the so-called physiological position, which is the squatting position. Williams' textbook, describing the second stage of labor, says "the primipara, . . . if left to herself, will usually assume the crouching or squatting posture." Buxbaum, discussing delivery in ancient times, describes the squatting position. The author of this paper cites several considerations that suggest that the squat or crouch is the physiological position for delivery. He describes a mechanism whereby tentorial tears are caused in the lithotomy position, and he shows that the physiological position minimizes this danger. The author recommends a specially designed obstetric chair-table.

## Pennsylvania Medical Journal, Harrisburg

**54:**97-192 (Feb.) 1951

Diagnosis and Therapy in Various Forms of Coronary Heart Disease. C. B. Ethridge.—p. 113.
Role of Antibiotics in Modern Treatment of Otorhinolaryngologic Conditions. M. S. Ersner.—p. 120.
Multiple Primary Malignancies. C. T. Beecham and A. S. Frantz.—p. 123.
Anatomic Surgery in Peripheral Vascular Disease. S. N. Rowe.—p. 127.
Responsibility of the General Practitioner in Public Health Aspects of Tuberculosis. C. H. Marcy.—p. 130.
Etiology of Rheumatic Fever. G. S. Gregg and F. J. Gregg.—p. 132.
Bronchiectasis: Rehabilitation with Surgical Treatment. G. P. Rosemond.—p. 134.
Cardiac Rehabilitation in Action in Industry. L. S. Ylvisaker.—p. 136.
Home Care for the Convalescent and the Elderly. R. R. Hoffman.—p. 139.

## Plastic & Reconstructive Surgery, Baltimore

**7:**73-168 (Feb.) 1951

Behavior of Autogenous Human Tissue Grafts: II. L. A. Peer and J. C. Walker.—p. 73.
Influence of ACTH on Wound Healing in Man. H. Baxter, C. Schiller and J. H. Whiteside.—p. 85.
Three Age Phases of Orthodontic Treatment of Cleft Palate Child. C. R. Conroy.—p. 100.
Skin Thickness in Human. D. E. Barker.—p. 115.
*Complications of Decubitus Ulcers in Patients with Paraplegia. H. Conway, R. B. Stark, J. C. Weeter and others.—p. 117.
Polyethylene—Three Year Study. L. R. Rubin.—p. 131.
Plastic Surgical Treatment of Chronic Suppurative Hydradenitis. P. W. Greeley.—p. 143.
Plastic Method for Refilling of Facial & Skull Depressions. E. Aldunate.—p. 147.
Marjolin Ulcer Case Reports. W. B. Macomber and J. C. Trabue.—p. 152.
Method for Reconstruction of Large Nasal Fistula. J. A. Tamerin.—p. 157.

**Decubitus Ulcers in Patients with Paraplegia.**—This paper reviews the surgical treatment of 102 decubitus ulcers in patients with paraplegia. Experience with two groups of cases attested to the soundness of surgical technique, which includes the following steps: complete excision of the ulcer and regional scar tissue, excision of regional new bone formation together with the underlying bony prominence, rotation of a flap of muscle over the exposed bone, closure of the wound by the use of a flap of skin and fat rotated to the area of the decubitus (placed so that suture lines and resultant scars are not over the site of previous decubitus) and the use of a free graft of skin at the point from which the flap was elevated. Excision of the underlying bony prominence has been reflected in an increased percentage of success in the operative closure of these ulcers. In 56 operative closures previously reported, 71% were successful. In the series of 70 operations reported herein, 81.5% were successful. As patients advance from life in bed to wheel chair existence, an increase in the occurrence of decubitus ulcers over the ischial tuberosities is noted. In these cases excision of the underlying bony prominence effected a dramatic improvement in the results of operative treatment. When this step was not employed, healed wounds were maintained in only 47% of cases; when it was employed, healed wounds were maintained in 80% of cases. Extensive calcification of soft tissues in paraplegic patients indicates a poor prognosis.

## Postgraduate Medicine, Minneapolis

**9:**101-192 (Feb.) 1951

Evaluation of Antibiotic Therapy. C. S. Keefer.—p. 101.
"Performance Index" as Method for Estimating Effectiveness of Reducing Regimens. N. Jolliffe and E. Alpert.—p. 106.
Management and Treatment of Cosmetic Dermatitis. N. Tobias.—p. 116.
Cryptogenic Fever. L. H. Sloan.—p. 118.
Management and Outlook of Coronary Disease. R. S. Berghoff.—p. 123.
Causes of Failure in Surgical Treatment of Hypertension. G. de Takats.—p. 128.

SYMPOSIUM ON TREATMENT OF AMEBIASIS

*Results with Diodoquin and Carbarsone. H. C. Conn and P. W. Feldman.—p. 137.
Results with Aureomycin. D. J. Mendelson and R. D. Friedlander.—p. 141.
*Results with Bismuth Glycolylarsanilate. H. C. Conn.—p. 144.

**Diiodohydroxyquinoline and Carbarsone in Amebiasis.**—A single course of therapy with diiodohydroxyquinoline (diodoquin®) and carbarsone was given to 497 patients with amebiasis. The dosage of diiodohydroxyquinoline was 0.63 gm. three times daily for 20 days. For 10 days 0.25 gm. of carbarsone was given twice daily. Patients were followed up for four years, with one examination every two months for one year whenever possible and then two examinations yearly for three years. The only toxic effects noted after administration of diiodohydroxyquinoline were frequent mild diarrhea and pruritus ani. After treatment with carbarsone one patient reported a mild skin rash, which quickly cleared after administration of the drug was stopped. Treatment failed in 66 of the 497 patients (13.2%). The percentage gradually became less as more examinations were made, but there were still some positive stools even after five successive negative specimens. Thus relapses were discov-

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ered after one or more years of presumed cure. Failures may be extremely resistant to treatment with any drug. The terms "arrested" or "apparent cure" seem to be much more appropriate in relation to amebiasis than that of "cure." Long-term follow-up is essential to proper control of amebiasis, which is becoming increasingly prevalent in civilian contacts of war veterans. A standard ideal laboratory diagnostic method using polyvinyl alcohol fixative stain as a preservative for trophozoites of intestinal amebas is suggested.

**Bismuth Glycolylarsanilate in Amebiasis.**—Thirty-six patients with amebiasis were treated with bismuth glycolylarsanilate (milibis®). The recommended adult dose is 0.5 gm. three times daily for seven days. In the presence of diarrhea larger doses may be needed. None of the patients reported on by the author had acute diarrhea, and they received only the above dosage. Treatment failed in four of the 36 patients (11.1%). One of the patients in whom treatment failed had two negative stool examinations after a second course of the drug. No toxic manifestations occurred in the group treated. It is felt that amebiasis in the future should be treated with chloroquine phosphate (aralen®) for systemic action and with a drug such as bismuth glycolylarsanilate for lumenal action. Long-term observation is a necessity in the treatment of amebiasis. All the drugs in use are effective in some cases. A few patients will be extremely resistant to any therapy. Patience and persistence will almost invariably produce a good clinical result.

## Proc. Soc. Exper. Biol. & Med., Utica, N. Y.

**76:**207-412 (Feb.) 1951. **Partial Index**

Eosinophile Levels in Hospitalized Psychotics During Combined Testosterone Estrogen Therapy. R. R. Sackler, M. D. Sackler, A. M. Sackler and others.—p. 226.
Serum Anti-Hyaluronidase in Human Leukemia and Lymphosarcoma: Effects of Cortisone and ACTH. H. H. Henstell and R. I. Freedman.—p. 239.
Effect of Intravenous Digitoxin on Fluid Distribution in Hospitalized Males Without Cardiovascular Disease. J. K. Aikawa, V. H. Knight and M. P. Tyor.—p. 250.
*Propagation of Pathogenic Fungi in Yolk Sac of Embryonated Eggs. J. W. Brueck and G. J. Buddingh.—p. 258.
*Loss of Protection by Vaccination Following Cortisone Treatment in Mice with Experimentally Induced Tuberculosis. M. Solotorovsky, F. J. Gregory and H. C. Stoerk.—p. 286.
*Absorption and Excretion of Viomycin in Humans. C. A. Werner, C. Adams and R. DuBois.—p. 292.
Inverse Changes of Serum Glucuronidase and Esterase of Breast Cancer Patients on Estrogen Therapy. S. L. Cohen and R. A. Huseby.—p. 304.
Influence of Storage on Viability of BCG Vaccine. K. Birkhaug.—p. 311.
Effect of Treatment with ACTH or Cortisone on Anatomy of Brain. C. W. Castor, B. L. Baker, D. J. Ingle and Choh Hao Li.—p. 353.
Effects of Ultrasonic Vibrations on Nerve Tissue. V. J. Wulff, W. J. Fry, D. Tucker and others.—p. 361.
Effect of Citrovorum Factor in Pernicious Anemia. R. R. Ellison, S. Wolfe, H. Lichtman and others—p. 366.
Passive Immunity in Poliomyelitis: II. Lansing Antibody Content of Human Gamma Globulins. A. J. Rhodes and E. M. Clark.—p. 379.
Role of Aureomycin and Citrovorum Factor in "Folic Acid" Deficiencies. H. A. Waisman, M. Green, J. C. Munoz and others.—p. 384.
Acid-Binding Capacity of Dialyzed Mucin Fractions from Human Gastric Juice. G. B. J. Glass, B. L. Pugh and S. Wolf.—p. 398.

**Propagation of Pathogenic Fungi in Yolk Sac.**—The studies reviewed in this report began with an attempt to produce infection of the chorioallantois with Actinomyces bovis. The extra-embryonic membranes were found to be indifferently suited for this purpose. Chance inoculation of the yolk sac resulted in the abundant growth of A. bovis. This observation led to a more thorough investigation of the possibilities of this method of inoculation for the propagation of pathogenic fungi and the study of mycotic infections. Embryos of seven to nine days' incubation proved to be most suitable for this purpose and were used throughout. The micro-organisms were introduced into the yolk sac of living embryos through a small slit in the eggshell by means of a tuberculin syringe and 22 gage needle. The yolk sac of the developing chick embryo proved to be highly suitable for the propagation of the following pathogenic fungi: A. bovis, Nocardia asteroides, N. intracellularis, Sporotrichum schenkii, Histoplasma capsulatum, Cryptococcus neoformans, and Coccidioides immitis. This method promises to be of value for the experimental study of these and other mycotic infections.

**Loss of Vaccination Protection Following Cortisone Treatment.**—The studies reported in this paper demonstrated that treatment with cortisone overcame the beneficial effect of vaccination in mice infected with a highly virulent strain of Mycobacterium tuberculosis, human type, but did not significantly increase the deaths in nonvaccinated mice. Treatment with cortisone increased the susceptibility of mice to infection with M. tuberculosis of reduced virulence. It is pointed out that exacerbation of tuberculosis during the hyperadrenal state has been observed in man and experimental animals. The mechanisms by which cortisone enhances the infectious process in experimental tuberculosis have not yet been completely elucidated. The results of the present study suggest that one of the mechanisms by which cortisone may alter the course of this disease is by interference with the immune response. In rapidly progressive tuberculosis where the role of acquired immunity would be expected to be minimal, cortisone did not exert a significant effect on the course of the disease. However, when vaccinated animals were treated with cortisone, the prolonged survival conferred by vaccination was lost.

**Viomycin: Absorption and Excretion.**—Viomycin, which is a derivative of a species of Streptomyces, has been of interest because of an inhibitory effect on mycobacteria, including M. tuberculosis, and because of its ability to suppress tuberculosis in animals. Preliminary clinical studies with viomycin in tuberculous patients have been carried out. The present study concerns the absorption and excretion of viomycin following its intramuscular injection in human subjects. It was demonstrated that viomycin was rapidly absorbed and that high concentrations were achieved in the serum after intramuscular injection. This may bear only a loose relationship to the successful utilization of the drug in antimicrobial therapy. However, the serum concentrations of viomycin that were attained were well in excess of the minimal inhibitory concentrations of viomycin required in vitro to suppress strains of M. tuberculosis isolated from patients with active tuberculosis. The pattern of absorption and urinary excretion of viomycin was similar to that of streptomycin.

## Public Health Reports, Washington, D. C.

**66:**223-258 (Feb. 23) 1951

Health of Ferrous Foundry Workers. H. Heimann.—p. 223.

**66:**259-294 (March 2) 1951

Research Contributions of BCG Vaccination Programs: I. Tuberculin Allergy as Family Trait. C. E. Palmer and S. N. Meyer.—p. 259.
*Resistance to Streptomycin of Tubercle Bacilli Isolated from Patients Treated with Streptomycin. S. H. Ferebee and F. W. Appel.—p. 277.

**66:**295-326 (March 9) 1951

Negro Mortality: IV. Urban and Rural Mortality from Selected Causes in North and South. M. Y. Pennell and M. Gover.—p. 295.
Health Department Assistance in Nutrition Education in Elementary and Secondary Schools. F. E. Whitehead and F. J. Stare.—p. 306.
Rickettsialpox Case Due to Laboratory Infection. M. H. Sleisenger, E. S. Murray and S. Cohen.—p. 311.

**Resistance of Tubercle Bacilli to Streptomycin.**—Investigators from several sections of the country participated in cooperative studies on streptomycin resistance of cultures of tubercle bacilli isolated at intervals during a period of one year from 157 patients who had been treated with streptomycin for 91 days. At the end of 53 weeks tubercle bacilli could not be cultured from the sputum of 40% of the patients but could be isolated from the sputum of 55%. The remaining 5% of the patients had died. The tubercle bacilli of approximately two-thirds of the patients who still had positive sputum at the end of 53 weeks were resistant to streptomycin. This resistance to streptomycin tends to persist after the cessation of treatment, although reversion to streptomycin sensitivity was observed in cultures isolated from approximately 18% of patients. In the majority of patients, the development of resistance of tubercle bacilli to streptomycin occurred during the administration of streptomycin. Of 18 patients who could not be included in the program because their initial cultures of tubercle bacilli were found to be resistant to streptomycin, five had previously received streptomycin therapy. The development of streptomycin-resistant organisms may influence the patient's chances of converting to negative cultures.

## FOREIGN

### Annals of Tropical Medicine, Liverpool

44:299-382 (Dec.) 1950. **Partial Index**

Survival of Yellow Fever Virus in Refrigerated Mosquitoes. R. W. Ross.—p. 299.
Correlation Between Blackwater Fever, Malaria, Quinine and Atabrin. H. Foy and A. Kondi.—p. 309.
Neutralization of French Neurotropic Yellow Fever Virus by Sera of Bwamba Children. G. W. A. Dick.—p. 319.
Simple Method of Taking Stereoscopic Photomicrographs. D. Gall and W. H. H. Andrews.—p. 339.
Cyclical Transmission of Yellow Fever Virus Through Grivet Monkey, Cercopithecus Aethiops Centralis Neumann, and Mosquito Aëdes (Stegomyia) Africanus Theobald. R. W. Ross and J. D. Gillett. —p. 351.
*Review of Incidence of Cysticercus Bovis in Cattle in Great Britain, Together with Consideration of Some Aspects of Taenia Saginata Infection in Man. R. B. Griffiths.—p. 357.

**Cysticercus Bovis in Cattle and Beef Tapeworm in Man.**—Griffiths reviews the incidence of infection of cattle in Great Britain with Cysticercus bovis, the larval stage of Taenia saginata, the human beef tapeworm, and records the incidence recently observed by himself at an abattoir in the Liverpool area. The data indicate that within recent years there has been a decided increase in the incidence of C. bovis infection in cattle in Great Britain. It is therefore of importance to consider whether the incidence of the adult T. saginata has increased in the human population. In Denmark T. saginata infection in the human population increased with a rising incidence of C. bovis in Danish cattle. In Great Britain there is unfortunately little information available on the incidence of the adult tapeworm. It is known that there is a higher incidence of infection in women than in men. One report suggests that housewives may acquire the infection when beef is available in the raw state, i. e., in the kitchen before it is cooked. They also make the interesting observation that the cyst readily adheres to the hands, so that, in the preparation of diseased meat, the cysticerci may become attached to the hands of the housewife and thence be ingested. This tendency of cysticerci to adhere to the skin surface—and indeed to any surface—was noted by the writer when carrying out routine identification examinations of specimens received in the laboratory.

### Archivum Chirurgicum Neerlandicum, Arnhem

2:301-400 (No. 4) 1950. **Partial Index**

Spondylitis Tuberculosa and Its Relation to Neurological Affections. A. C. de Vet.—p. 303.
*Therapeutic Possibilities of Grafting Cultivated Embryonic Tissues in Man: Parathyroid Gland in Cases of Postoperative Tetany. P. J. Kooreman and P. J. Gaillard.—p. 326.
Mignon's Eosinophilic Granuloma. H. N. Hadders, R. Ruding and D. Vervat.—p. 355.
Retrograde Intussusception of Efferent Jejunal Loop After Gastrectomy. M. Vink.—p. 377.
*Pedicle Graft for Ulcers of Lower Extremities. R. Brummelkamp. —p. 391.

**Grafting of Cultivated Embryonic Parathyroid Tissue in Postoperative Tetany.**—The various possibilities of therapeutic grafting are discussed, but particular attention is given to "real grafts," those which survive and become an integral part of the organism. In grafting endocrine gland tissue the following requirements must be fulfilled: the fragments must be thin; bleeding must be absent; the diffusion possibilities must be good; the revascularization must be fast; individuality factors must be in agreement or absent, and the grafts must be bacteriologically sterile. The work of Bert is mentioned, who stressed the importance of using tissues from embryos, because they do not yet possess much individuality and have a high regenerative power. Moreover, according to the work of several other investigators, cultivation of the tissues in mediums prepared from the future host is of great importance for good transplantation results. The authors of this report, Kooreman and Gaillard, started in 1940 to transplant cultivated fetal human parathyroid tissue into the patients with postoperative or with idiopathic tetany. Within three hours after death, the thyroid glands from newborn babies who died in the obstetric clinic were removed and stored in 10% placental vein serum in Gey's balanced salt solution. The thyroid gland was studied under the dissecting microscope. In this way organs such as extra thyroid glands, lymph glands, thymus glands, and real parathyroid glands could be seen. Neither topographical relations nor crude morphological criteria were sufficient to permit differentiation of the real parathyroid glands; all organs were therefore cultivated until—after one or two days—histological control and the behavior of the explants was absolutely conclusive on this point. After describing the cultivation of the tissues and the technique of implantation, the authors present the histories of the 27 patients with postoperative tetany and two with spontaneous tetany into whom 42 parathyroid grafts were implanted. The results of "real grafts" can be evaluated only after at least a year, since temporary grafts can be active for six or eight months. It was possible to evaluate 21 patients. The possibility of obtaining a positive result decreased with increasing age. Between 16 and 26 years of age four out of five patients were cured (80%). Between 26 and 36 years of age three out of eight patients were cured (37.5%). None of the eight patients between 36 and 56 years of age were cured. Repeated transplants were sometimes necessary to obtain a positive result in the younger groups.

**Pedicle Graft for Ulcers of Lower Extremities.**—Ulcers located on the anterior or medial aspect of the distal part of the leg are often refractory to treatment. The edges soon adhere to the tibia and become completely rigid. As the bottom of the ulcer rests on the tibia, vascular supply from the depth is only minimal; this renders the granulation tissue atrophic and inadequate as a substratum for the epithelium. However, the connective tissue reacts to wound irritation, in the crater as well as in the immediate vicinity of the ulcer. It will eventually begin to shrivel, thus constricting the afferent vessels and giving rise to a callous, ischemic mass in and around the ulcer. Once the process has reached this stage, spontaneous healing can no longer be expected. Lasting cure can be attained only by removal of all callous tissue and filling of the defect with full thickness skin. Implanting of full thickness skin with a layer of fat on such a defect is possible only by means of a pedicle graft. Fortunately, this persistent form of ulcer is nearly always situated along the anterior or medial aspect of the distal part of the leg. It is therefore possible to place the affected leg in such a position that the wound lies adjacent to the calf of the healthy leg from which the flap is taken. The author describes a method of suspending the donor leg freely over the affected one. This method offered no difficulties of fixation or nursing. The five patients treated in this manner all showed a favorable result.

### British Medical Journal, London

1:373-430 (Feb. 24) 1951

Types of Human Diabetes. R. D. Lawrence.—p. 373.
*Constitution and Insulin Sensitivity in Diabetes Mellitus. J. Lister, J. Nash and U. Ledingham.—p. 376.
*Response of Megaloblastic Macrocytic Anaemia to Crystalline Penicillin G: Preliminary Report. H. Foy, A. Kondi and A. Hargreaves.—p. 380.
*Trial of Cinchoninic Acid Derivative in Some Collagen Diseases. J. B. Rennie, J. A. Milne and J. Sommerville.—p. 383.
Side Effects of Chloramphenicol and Aureomycin, with Special Reference to Oral Lesions. T. Tomaszewski.—p. 388.
Carcinoma of Cervix Uteri in an Infant. M. D. Baber, E. ap I. Rosser and J. D. O'D. Lavertine.—p. 392.
Dissecting Aneurysm of Aorta with Renal Complications. H. Brebner. —p. 394.

**Constitution and Insulin Sensitivity.**—In a study of 95 diabetic patients, 38 (eight men and 30 women) were found to have an unremarkable constitution in that no characteristic features common to the group could be observed. Thirty-seven (six men and 31 women) conformed to a definite constitutional type recognizable clinically, although all the stigmas were not present in each case. The latter group tended to be overweight, on the basis of a weight-height ratio of 2:1 as the standard of normality. One-fifth of the patients examined were intermediate in type and could not be classified. The mean insulin sensitivity of the patients with an unremarkable constitution was 0.78, and in those with a characteristic constitution it was 0.48. Partial cor-

An asterisk (*) before a title indicates that the article is abstracted. Single case reports and trials of new drugs are usually omitted.

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relation coefficients for insulin sensitivity and obesity in the two types of diabetics did not enable the authors to define precisely the effect of weight on insulin sensitivity, but their clinical impression was that in most cases the actual sensitivity of a patient is a fundamental constitutional characteristic. Anthropometric measurements and somatotypings from 225 diabetics were analyzed by other workers who observed that two clearly different morphological types could be recognized. Although no insulin sensitivity tests were carried out by these workers and no somatotyping was done in the authors' 95 patients, the similarity between the observations in these two series of diabetic patients is stressed. There are two constitutional types of diabetic patients who differ in their reaction to insulin and in whom the etiology of the diabetic state is probably different.

**Megaloblastic Anemia Treated with Penicillin.**—A native African woman with megaloblastic macrocytic anemia was given 400,000 units of crystalline penicillin G daily for seven days. The reticulocyte level rose to 37%, and this was followed by a rise in the hemoglobin and red blood cells. No other treatment was given. The megaloblasts had disappeared from the marrow by the fifth day of treatment, and the giant stab cells had become much less numerous. The Price-Jones curve, which had originally shown anisocytosis and macrocytosis, reverted to the normal pattern. The response to penicillin in this patient in no way differed from that obtained in other patients with megaloblastic macrocytic anemias when treated with a potent liver extract, pteroylglutamic acid, vitamin $B_{12}$, or a yeast extract (marmite). It is suggested that the penicillin may have been effective by destroying an organism that was competing for some hemopoietic substance or it may have removed a hematopoietic antagonist. It may have even prevented the absorption of glutamic acid by competing organisms, which might thus have interfered with the synthesis of pteroylglutamic acid. Penicillin may have affected the metabolism and excretion of some essential amino acids. Any or all of these concepts might explain the response to penicillin.

**Trial of a Cinchoninic Acid Derivative.**—Twelve patients, nine adults and three children, four with rheumatic fever, two with polyarteritis nodosa, three with scleroderma and three with lupus erythematosus were treated with a cinchoninic acid derivative, 3-hydroxy-2-phenylcinchoninic acid. The dosage used was 20 mg. per kilogram of body weight by mouth daily, which in some instances was increased to 40 mg. Seven patients were treated for one week, the remaining five patients for two or three weeks. The drug was taken after breakfast in three divided doses at hourly intervals. Fever and acute arthritis were speedily relieved in the patients with rheumatic fever. Results in polyarteritis nodosa were equivocal. The most striking effects were obtained in the patients with scleroderma, a disease hitherto not responsive to any known treatment. Improvement occurred in all three patients, as shown microscopically by biopsy specimens obtained before and after treatment. The results have so far been maintained in one patient and were only temporary in the other two. Slight and inconstant improvement followed the administration of the 3-hydroxy-2-phenylcinchoninic acid in chronic lupus erythematosus but was not confirmed by microscopic examination. Toxic effects were infrequent and less severe than those that may follow the use of sodium salicylate and consisted in slight nausea, diarrhea, and, more rarely, vomiting.

## Deutsche medizinische Wochenschrift, Stuttgart

**76:**165-196 (Feb. 9) 1951. **Partial Index**

*Indications and Results of Surgical Treatment of Prolapsed Lumbar Intervertebral Disk: Follow-Up Examination of 210 Cases Operated on. H. Kuhlendahl and V. Hensell.—p. 165.
Today's Picture of Plasmocytoma. S. Sandkühler.—p. 168.
Old and New Problems of Goiter. W. Eickhoff.—p. 171.
Traumatic Cushing's Disease. H. Robbers.—p. 175.

**Surgical Treatment of Prolapsed Lumbar Intervertebral Disk.**—Various forms of prolapsed lumbar intervertebral disk, ranging from simple degeneration or chondrosis of the disk with rupture of the annulus fibrosus to a "sequestrated prolapse" on the dorsal-paramedian surface of the completely ruptured disk, may be observed, but usually surgery is definitely indicated only in the latter form. Decompression of the nerve root is the first and foremost aim of surgical treatment. Not all the patients with a compressed nerve root and not every patient with protruded lumbar intervertebral disk should be operated on. Two hundred and ten patients operated on for prolapsed lumbar intervertebral disk were followed up by the author for more than one to four years. Complete disappearance of the sciatic pain and of the back pain and restoration of work capacity was obtained in 40% of the patients. Except for temporary insignificant back pain, the same good results were obtained in an additional 25%, so that satisfactory results were obtained in a total of 65% of the patients operated on. Thirty per cent of the patients were considerably improved, with 19% able to resume their former work, while 11% could only perform lighter work. Thus a total of 95% of the patients were operated on successfully. Five per cent of the patients operated on were therapeutic failures because of considerable back pain, which prevented them from resuming work. For the majority of them fusion operation seems advisable. An additional 5% of the patients operated on had recurrences; of these 12 patients, seven made a complete recovery after a second operation, and two with a mild recurrence made a spontaneous recovery. A review of 6,600 patients operated on, followed up, and cited in world literature revealed satisfactory results in 83 to 95% of the cases.

## Gynaecologia, Basel

**131:**65-128 (Feb.) 1951. **Partial Index**

Morphological Study of Endocervical Mucosa in Relation to Menstrual Cycle and to Leukorrhea. G. Duperroy.—p. 73.
Anesthesia During Shock and Hemorrhage. V. Finderle.—p. 87.
Utrasonics and the Ovaries. P. Friedli.—p. 97.
*Problem of Perineal Endometriosis. J. Dubas.—p. 115.

**Perineal Endometriosis.**—The woman whose case is reported had undergone episiotomy in the course of a delivery 3½ years before. The area healed, and two weeks later the uterus had to be evacuated manually because of hemorrhage. The episiotomy scar was then ruptured, and, after that, healing was slow. Subsequently there was intermittent pain in the scar and occasionally there was bleeding, but real symptoms did not develop until about three years after the episiotomy had been done. An indurated area developed and gradually increased in size. The growth was painful, and drops of blood were discharged from it during the second half of the menstrual cycle. It was excised, and histological examination disclosed changes typical of endometriosis. This case is noteworthy because perineal endometriosis is rare. If the implantation therapy of endometriosis is accepted this may seem surprising, in view of the high incidence of perineal tears and episiotomies. The author feels that this rarity can be explained by the fact that the decidua expelled during the postpartum period is not implantable and is not capable of further development. Only mucosa in the phase of hormonal regeneration is implantable. It is suggested that in the reported case implantation took place not immediately after delivery but at the time of the profuse hemorrhage and uterine evacuation two weeks after delivery. The author believes that apart from rare hematogenous cases, perineal endometriosis arises from mechanical implantation.

## Journal of Bone and Joint Surgery, London

**32B:**451-778 (Nov.) 1950

Orthopaedic Surgery in the United States of America. L. Mayer.—p. 461.
Orthopaedics in Continental Europe, 1900-1950: The Changing Pattern. H. Platt.—p. 570.
Fifty Years of Orthopaedic Surgery in Canada. R. I. Harris, W. E. Gallie, A. McLachlin and others.—p. 587.
Australian Orthopaedics in the Last 50 Years. H. J. Burrows.—p. 601.
First Half-Century of Orthopaedic Surgery in New Zealand. C. Milsom.—p. 611.
Development of Orthopaedic Surgery in South Africa During the Past Half-Century. J. M. Edelstein.—p. 615.
Orthopaedic Surgery in Southern Rhodesia. J. H. G. Robertson.—p. 618.
Half a Century of Orthopaedic Progress in Great Britain. H. Osmond-Clarke.—p. 620.
Some Classics of British Orthopaedic Literature. D. L. Griffiths.—p. 676.
Medullary Nailing of Fractures After 50 Years, with Review of Difficulties and Complications of Operation. R. Watson-Jones, J. G. Bonnin, T. King and others.—p. 694.
Endocrinology and Orthopaedics in 50 Years. S. L. Simpson.—p. 730.

## Journal de Chirurgie, Paris

**67:**1-112 (Jan.) 1951

Invaginations of Ileal Termination: Roentgenologic Examination. M. Fèvre.—p. 5.
*Surgical Treatment of Portal Hypertension by Portacaval Shunts. J. Auvert.—p. 26.

**Portacaval Anastomosis for Portal Hypertension.**—Portal hypertension as it is encountered in Banti's syndrome or in certain cirrhoses can cause massive hematemesis. The demonstration of esophageal varices is a pathognomonic sign of this syndrome. In this report Auvert discusses the various aspects of the surgical treatment of portal hypertension. The operations employed are of two types: (1) splenectomy followed by implantation of the splenic into the renal vein after nephrectomy on the left side and (2) implantation of the portal vein into the inferior vena cava above the renal veins. At the time of operation it is important to determine whether there is intrahepatic portal obstruction due to cirrhosis or extrahepatic obstruction of the portal vein or its branches (splenic or mesenteric). Special attention is given to the initial abdominal exploration during which proof is established for portal hypertension. After the incision has been made (preferably a transverse, subumbilical one) the stomach, the spleen and its vessels, the porta hepatis, and the entire liver are subjected to visual and manual exploration, and this is followed by manometry at various points for verification of the existence of portal hypertension and its location. Manometric tests may be combined with intraoperative roentgenography of the portal vein with the aid of a contrast medium. Depending on the observations during these preliminary explorations, the surgeon can then enlarge the incision along the ninth rib either to the right side of the thorax for direct portacaval anastomosis or to the left half of the thorax for splenectomy and splenorenal anastomosis on the left side. Although the postoperative administration of heparin may seem desirable, it is often dangerous. Follow-up examinations show that only large anastomoses will prevent the recurrence of hematemesis.

## Journal of Physiology, Cambridge

**112:**1-242 (Jan. 30) 1951. **Partial Index**

*Dyshidrosis Produced by General and Regional Ultra-Violet Radiation in Man. M. L. Thomson.—p. 22.
*Cause of Changes in Sweating Rate After Ultra-Violet Radiation. M. L. Thomson.—p. 31.
Effects of Severe Asphyxia on Kidney and Urine Flow. K. J. Franklin, L. E. McGee and E. A. Ullmann.—p. 43.
Urinary Excretion of Creatinine During Inhibition of Water Diuresis in Man by Ischaemic Muscle Pain. A. R. Kelsall.—p. 54.
Tension and Resistance to Stretching of Human Skin and Other Membranes, with Results from Series of Normal and Oedematous Cases. J. C. Dick.—p. 102.
Intra-Abdominal Pressures During Quiet Breathing. J. N. Mills.—p. 201.
Decrease in Hand Blood Flow Following Inflation of Arterial Occlusion Cuff on Opposite Arm. I. C. Roddie.—p. 204.
Effect of Posterior Pituitary Extracts on Renal Excretion of Sodium and Chloride in Man. T. M. Chalmers, A. A. G. Lewis and G. L. S. Pawan.—p. 238.

**Dyshidrosis Produced by Ultraviolet Radiation.**—In a hot, wet environment general ultraviolet radiation in moderate erythemal doses produced, in seven persons acclimatized to heat but not to radiation, up to 60% diminution in sweating rate on the second or third day after exposure. After recovery from the disturbance of sweating caused by one exposure to radiation, a second exposure produced a further fall in sweating rate in the same persons. The wave lengths causing the reduction in sweating rate are probably present in natural sunlight.

**Cause of Changes in Sweating Rate After Ultraviolet Radiation.**—The vesicular rash found in many subjects after ultraviolet radiation provided evidence that blockage of sweat gland ducts was at least partly responsible for the diminished sweating that followed the radiation. Occlusion of a proportion of the sweat gland ducts in irradiated skin was confirmed histologically. Blockage of sweat gland ducts, however, appears not to be the sole factor responsible for the decreased sweating. Indirect evidence suggests that the secretion itself is reduced. It is suggested that the reduced sweat secretion is brought about by toxins that have diffused from the injured epidermis. Skin injury produced by allyl isothiocyanate (mustard oil) also caused a fall in sweating rate similar in extent and duration to that produced by ultraviolet radiation. The slight reduction of sweating rate caused by locally applied massive doses of histamine suggested that the above effect of ultraviolet radiation and allyl isothiocyanate was not mediated through the release of a histamine-like substance.

## Lancet, London

**1:**359-418 (Feb. 17) 1951

*Myocardial Ischaemia and Its Surgical Relief. G. A. Mason.—p. 359.
*Anaemia of Pregnancy Treated with Intravenous Iron. J. M. Scott and A. D. T. Govan.—p. 367.
Incidence of Tuberculin Sensitivity in Hospital Children: Related Mortality. M. J. Lunn.—p. 370.
Persistent Hypokalaemia Requiring Constant Potassium Therapy. K. Kjeruff-Jensen, N. B. Krarup and A. Warming-Larsen.—p. 372.
Treatment of Chronic Renal Potassium Deficiency. H. G. Davidsen, K. Kjeruff-Jensen and N. B. Krarup.—p. 375.
Fingerprint Detection and Mercury Poisoning. T. H. Blench and H. Brindle.—p. 378.
Effect of Venous Occlusion on Peripheral Arterial Blood-Flow. J. E. Thompson and J. R. Vane.—p. 380.
Recurrent Kaposi's Varicelliform Eruption in an Adult. W. C. Boake, J. A. Dudgeon and M. Burnet.—p. 383.
Clinico-Anatomical Study of Successful Leucotomy. S. D. McGrath. —p. 385.
Delayed Pulmonary Complications of Bronchography. P. W. Robertson and K. D. F. Morle.—p. 387.
Fatal Thyroid Crisis Complicating Toxic Granulopenia During Thiouracil Therapy. A. B. Pollard.—p. 388.

**Myocardial Ischemia and Its Surgical Relief.**—Although myocardial ischemia is often manifested by angina or coronary thrombosis, in many cases it is more insidious: there may be shortness of breath on exertion, a sense of oppression in the chest, or other sign of cardiac dysfunction, such as congestive failure, auricular fibrillation, or heart block. Since medical treatment is of little avail, various surgical treatments have been tried. These include (1) attempts to reduce the metabolic activity by reduction in thyroid activity, (2) interruption of nervous pathways, so that pain is eliminated, (3) stimulation of intercoronary compensating circulation by obstruction of the flow in the cardiac veins, and (4) operations to improve the vascularity of the heart muscle by the provision of extracardiac collateral vessels. Mason reviews observations on 30 patients subjected to the last type of operation during the past 14 years. In his earlier cases the original O'Shaughnessy anterolateral thoracotomy and transpleural exposure of the heart were used, and a pedicled graft of great omentum was brought up and applied to the heart. Later Beck's revised approach was used. With this the third, fourth, and fifth left costal cartilages are removed, the pericardium being opened extrapleurally and between the intercostal bundles. The parietal pericardium was abraded with Beck's raspatories and then it was smeared with paste made of a purified wheat gluten preparation (aleuronat) or asbestos powder was insufflated into the sac. If the condition of the patient permitted, the omentum was first brought up, spread over the heart surface, and tacked to the pericardium. For a time the author avoided suturing directly to the heart, but he now feels that this probably need not be feared. Eleven of the 30 patients did not survive the first month, three were not relieved of their angina, and 16 are thought to have benefited from grafting, but in six of the 16, the relief is problematical. It should be remembered, however, that nearly all these were rather hopeless cardiac cases. To restore only a third of such patients to full activity, even temporarily, as well as to relieve them of their painful disability seems to have been worth while. Experience and better facilities for anesthesia will probably improve the results.

**Intravenous Iron for Anemia of Pregnancy.**—Resistance to orally administered iron therapy is comparatively frequent in pregnant women with anemia, but in these resistant patients the intravenous method is often effective. Scott and Govan treated 150 anemic pregnant women with iron intravenously administered. On the first day the equivalent of 30 mg. of elemental iron is given, on the second day 60 mg., and on the third day 100 mg. Thereafter 100 mg. is given daily until the end of the first week. During the second week, 100 mg. is given every second day, so that by the end of this week 790 mg. of elemental iron has been given. In moderate cases the blood is then above the anemia level, and the patient may then be given iron by mouth if necessary. Patients with severe anemia may continue to receive iron intravenously, 100 mg. every second day, in

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subsequent weeks, or once a week, according to the severity of the anemia. If a single dose of elemental iron exceeds 100 mg., severe reactions tend to develop. Minor reactions, such as pain in the arm, common to many types of intravenous injection, occurred in about 20% of cases. During the antenatal period most of the patients responded immediately, and with the dosage used there was an average increase of 1.5 gm. of hemoglobin per 100 ml. in a week. About a third of the patients showed no response until the second week of treatment. This delay seemed to be related to the availability of protein. During the puerperium the average response to intravenous iron almost reached the calculated level of 4% increase in hemoglobin per 100 mg. of elemental iron administered. In a few cases this figure might be exceeded, probably owing to the hemoconcentration, which begins usually about the third day after delivery. However, some puerperal patients did not respond immediately. In five the cause was infection and cardiac failure. The rest had suffered severe shock at delivery. Intravenous iron therapy is useful in anemia in pregnancy, especially when quick therapy is needed.

## Medicina, Buenos Aires

**10:**411-490 (Dec.) 1950. **Partial Index**

*Subacute Bacterial Endocarditis: Clinical, Anatomic and Therapeutic Studies in Chile. A. Garretón Silva.—p. 411.

**Subacute Bacterial Endocarditis.**—During the last 25 years the author has studied 605 cases of subacute bacterial endocarditis. The clinical aspects, special characteristics of the disease in Chile, the relation of the disease to rheumatic fever or congenital abnormalities of the heart, the diagnosis, prognosis, and pathological anatomy are discussed in detail. Penicillin was given to 172 patients whose disease was of rheumatic origin. This was administered on a three hour schedule with an initial dose of 200,000 units and a total daily dose of 1,600,000 units. Treatment was continued until the erythrocyte sedimentation rate was normal. The total dose varied from 8,500,000 units to 270,000,000 units. There was no correlation between the results of the pretreatment blood cultures and the results of penicillin treatment. Complete clinical cure occurred in 74 cases (43%). The ultimate outcome of these patients varied as follows: (1) permanent and complete clinical cure, (2) occurrence of embolism shortly after occurrence of apparent clinical cure (three cases in the author's group), (3) recurrence of the disease and subsequent control by reestablishment of penicillin treatment (four cases in the author's group), (4) clinical cure of the bacterial process with persistence of cardiac insufficiency, and (5) paradoxical clinical cure with appearance of progressive cardiac insufficiency and fatal outcome. The paradoxical results are frequent in patients with aortic lesion. The treatment in the three cases of persistent ductus arteriosus consisted of a surgical operation in two cases (with one cure and one failure) and successful penicillin therapy in one.

## Minerva Medica, Turin

**41:**1203-1222 (Dec. 8) 1950. **Partial Index**

*Possibility of Accelerating Reabsorption of Intrapleural Blood by Means of Diffusion Factor: Preliminary Report of Experimental Study. B. Amistani and A. Vangelista.—p. 1208.
Frequency of Appendectomy in Patients with Cholecystitis. R. Cattaneo and P. C. Feraboli.—p. 1217.
*Tuberculous Peritonitis with Pseudoappendicular Symptoms. A. Mazzi. —p. 1220.

**Reabsorption of Intrapleural Blood by Hyaluronidase.**—Young dogs and rabbits were given intrapleural injections of their own blood mixed with an equal quantity of normal sodium chloride solution. Some were given 10 cc. of this mixture, others 300 cc. The injection was given into the right pleura through a small intercostal wound. Half the animals in each large group also received an intrapleural injection of 250 viscosity units of hyaluronidase, whereas the control animals did not. Daily roentgen examination of the dogs showed reabsorption of the intrapleural blood mixture usually within the first 24 hours after the injection in those receiving hyaluronidase or, in a few animals, within the first three days, whereas the quantity of the intrapleural blood mixture remained unchanged for five days or more in the controls. The rabbits were killed 24 hours after administration of the injection, and the residual intrapleural liquid was measured. There was half the quantity of residual intrapleural blood in the animals that had hyaluronidase in comparison to that measured in the controls. The results indicate that hyaluronidase favors reabsorption of blood collected in the serous cavities. The authors therefore advise clinical administration of the substance in all cases in which blood is collected into the serous cavities as a result either of a surgical operation or of trauma.

**Tuberculous Peritonitis with Pseudoappendical Symptoms.**—According to Mazzi, the pathological lesion of tuberculous peritonitis with pseudoappendical symptoms consists of a form of latent miliary tuberculosis, which is limited to the peritoneum and the ileocecoperitoneal segment. The lesion is not macroscopically identifiable. The author observed 230 patients who had an appendectomy for either acute or chronic appendicitis. Macroscopic lesions of tuberculous peritonitis were not seen during the operation. However, tuberculous peritonitis developed within three months after operation in 85 patients (38.99%). Hereditary predisposition to tuberculosis, temporarily diminished organic resistance of the patient, and, probably, surgical trauma transform the disease from latent to active. The author points out the danger of appendectomy in these cases and advises a careful evaluation of the clinical symptoms of appendicitis, either acute or chronic, in patients with previous symptoms of mild fever and pleuropulmonary or other diseases of tuberculous nature.

## Münchener medizinische Wochenschrift, Munich

**93:**305-352 (Feb. 16) 1951. **Partial Index**

*Selective Angiography of Pulmonary Vessels: Preliminary Report. W. Bolt, A. Stanischeff and Zorn.—p. 305.
Lymphography. H. Cramer and A. Karpati.—p. 309.
Floating Kidney, a Frequently Unrecognized Symptom Complex. W. Martin.—p. 313.
Significance of Medicometeorological Observations in Diseases of Nursing Infants. F. Trendtel and Helbig.—p. 317.

**Selective Angiography of Pulmonary Vessels.**—A preliminary report is presented on 300 selective angiograms of pulmonary vessels. Five to 12 cc. of 80% solution of methyl glucamine salt of 3,5-diiodo-4-pyridone-N-acetic acid (perabrodil-M 80%) were injected into the pulmonary artery. Serial roentgen ray pictures of the lung segment concerned were made after the injection of the contrast medium, so that all the phases of the circulation in the segment concerned could be demonstrated. The contrast medium should not be injected under pressure if one of the vessels has been obturated by the catheter. The patients were aware of the local anethesia in the region of the vena mediana cubiti, but they were not aware of the passage of the catheter through the right side of the heart into the pulmonary artery. By this technique arteriography does not entail opening or damaging of the arterial wall. Selective angiography of the pulmonary artery is indicated for the early diagnosis of bronchial carcinoma. It is emphasized that the angiogram of atelectasis is completely different from that of bronchial carcinoma. Early stiffness of portions of bronchi and of areas of pulmonary parenchyma due to flat growth of the neoplasm may be better demonstrated by angiography than by bronchography. Selective angiography of pulmonary vessels also proved valuable in cases of silicosis of second and third degree, in nearly all of which the venous reflex could be clearly demonstrated in the segment concerned. The method also revealed the length of time during which the contrast medium remained in the capillaries. Selective angiography of pulmonary vessels should not be used as a routine procedure, but it may be considered an adjunct to old proved methods, such as bronchoscopy, tomography, and bronchography.

## Proceedings of Royal Society of Medicine, London

**44:**1-100 (Jan.) 1951. **Partial Index**

Delay in Diagnosis of Tuberculous Meningitis and Its Relation to Results of Treatment. J. Lorber.—p. 1.
Plastic Operation for Hydronephrosis. J. C. Anderson and W. Hynes. —p. 4.
Parenteral Alimentation in Relation to Nitrogen Balance and Liver Damage. S. A. Doxiadis.—p. 5.
Soft Tissue Tumours: Their Natural History and Treatment. S. Cade. —p. 19.
Cerebral Basis of Consciousness. W. R. Brain.—p. 37.

# BOOK REVIEWS

**Neurology and Psychiatry in General Practice.** Edited by Henry R. Viets, M.D. In collaboration with C. Charles Burlingame, M.D., Clarence B. Farrar, M.D., and Z. M. Lebensohn, M.D. Cloth. $3.50. Pp. 150. Grune & Stratton, Inc., 381 Fourth Ave., New York 16, 1950.

This small volume of sixteen chapters and 150 pages contains a wealth of material for the general practitioner which will aid him in the management of the neurological and psychiatric problems commonly encountered in his practice. The book is a summary of the discussions at the Clinical Session of the American Medical Association held in Washington, D. C., in the winter of 1949. The topics and the discussants were selected by the late Dr. C. Charles Burlingame, and the manuscripts were edited in a form suitable for the volume by Dr. Henry R. Viets, in collaboration with Drs. Burlingame, Clarence B. Farrar, and Z. M. Lebensohn. The choice of topics was excellent, and the leading authorities in the various fields have given a brief but lucid summary of the management of patients with the various disorders considered. Among the neurological conditions discussed are convulsive disorders of childhood and adult life, the Parkinsonian syndrome, neurosyphilis, and headache. Emphasis is placed on the medical therapy and general management of these conditions by the practitioner.

In the psychiatric section the physician is given information that will help him to decide which patients he can adequately care for and which ones should be referred to the psychiatrist for more intensive therapy. There are also chapters to orient the physician in regard to the value and limitations of electroconvulsive therapy and psychosurgery.

The book is well printed, and there is an adequate index. There are no illustrations, because the nature of the material presented did not require their use. The material presented in all the chapters is concise and relevant, and the volume should be of great value to the general practitioner.

**Medical Psychology: A Basis for Psychiatry and Clinical Psychology.** By G. K. Yacorzynski, Ph.D., Associate Professor of Nervous and Mental Diseases, Northwestern University Medical School, Chicago. Cloth. $6. Pp. 535, with 68 illustrations. The Ronald Press Co., 15 E. 26th St., New York 10, 1951.

This book has been prepared primarily as a textbook based on a theoretical-experimental approach. It is intended for use as a first year course in psychiatry. The author has presented only those theoretical constructs that have the widest acceptance and has endeavored to provide the experimental and clinical evidence from which they are derived. An attempt has been made to integrate the concepts of the behaviorist, Gestalt, and Freudian schools with the stated purpose of providing an integrated orientation for the student without the bias of any particular school.

The comprehensive coverage of the text makes it of value as a source background for psychiatrists, internists, sociologists, and other persons concerned with the problems of human behavior.

**Medical Treatment in Obstetrics & Gynecology.** By C. Frederic Fluhmann, B.A., M.D., C.M., Clinical Professor of Obstetrics and Gynecology, Stanford University School of Medicine, San Francisco, California. Cloth. $3. Pp. 157, with 27 illustrations. Williams & Wilkins Company, Mount Royal and Guilford Aves., Baltimore 2, 1951.

This small volume will find a ready demand among busy physicians. Dr. Fluhmann has assembled a quick and authoritative answer to questions which perplex many physicians in attempting to use the recently developed medications in this field. The preparations available in female endocrinology have confusing names and dosages, but with this ready reference you can write a prescription that may even satisfy your pharmacist. This is a clear, concise book on materia medica for the obstetrician and gynecologist.

The reviews here published have been prepared by competent authorities and do not represent the opinions of any official bodies unless specifically stated.

**Surgical Forum: Proceedings of the Forum Sessions Thirty-Sixth Clinical Congress of the American College of Surgeons, Boston, Massachusetts, October, 1950.** Surgical Forum Committee: Owen H. Wangensteen, M.D., F.A.C.S., Chairman, and others. Cloth. $10. Pp. 665, with 260 illustrations. W. B. Saunders Company, 218 W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W.C.2, 1951.

This attractively printed volume represents a definite innovation in surgical literature. The Forum on Fundamental Surgical Problems was established in 1941 as a permanent feature of the clinical congresses of the American College of Surgeons. The forum was created to give an opportunity to the younger men engaged in research on surgical problems to present their work before the older members of the profession. The papers represent what is best in the field of surgical research. The length of an individual paper was limited to 3,000 words. The present volume consists of reports on original research dealing with practically every aspect of modern surgery. In addition to the regular papers, each subdivision contains a number of abstracts. These are brief reports by authors who for one reason or another could not complete their papers. The publication of this type of literature has two advantages: it gives the younger men an opportunity to present their research, and it stimulates the older men preoccupied with practical clinical work. The volume is well illustrated.

**Studies in Pathology Presented to Peter MacCallum.** Edited by E. S. J. King, T. E. Lowe and L. B. Cox. Cloth. $7; 35s. Pp. 350, with 48 illustrations. Melbourne University Press, Carlton, N. 3, Victoria; Cambridge University Press, 51 Madison Ave., New York 10; Bentley House, 200 Euston Rd., London, N.W.1, 1950.

This book presents a series of papers in the field of pathology which were written by students and associates of Peter MacCallum, pathologist, of Melbourne, Australia, on the occasion of his sixty-fifth birthday. The papers cover various aspects of morphologic pathology, but many of them are also of interest to the clinician and concern broad aspects of biology. Special reference should be made among the 23 papers to "The Contribution of Pathology to Biology" by King, "Metaplasia" by Willis, "Normal and Pathologic Patterns in the Liver" by Cameron, and "Vascularization and Hemorrhage in the Arterial Wall" by Wartman. The last two authors were associated with Peter MacCallum only a very short time, whereas most of the others have been his students. The papers, as well as the large number of excellent illustrations, make worthwhile reading and give information not necessarily available elsewhere.

**History of the New England Female Medical College, 1848-1874.** By Frederick C. Waite. Cloth. $3. Pp. 132. Boston University School of Medicine, 80 E. Concord St., Boston 18, 1950.

In the preface and in chapter one, the author points out that the establishment about 100 years ago of a female medical college was part of a public agitation for woman's rights, which had been going on in the United States since 1836. By 1848, the number of agitators had increased to such an extent that a national convention was held, at which the right of women to enter the profession of medicine was advocated. Other liberalizing movements got under way about this time. The first homeopathic medical college was founded in the United States in 1836. Thomsonianism, a cult of botanic medicine, which had been rampant since the early 1820's, disintegrated in 1843, and from its remnants arose electicism, another cult, the keystone of which was the administration of only one drug at a time. The vagaries of mesmerism, phrenology, spiritualism, and animal magnetism tried to attach themselves to medicine, but they soon disappeared. A semblance of order was brought about by the organization of the American Medical Association in 1847. In 1848, instruction began in the first institution in the United States for teaching medical subjects to women, the Boston Female Medical College. This institution changed its name in 1851 to the New England Female Medical College. In writing this history, the author derives his information from the complete manuscript records of the trustees and faculty, from a nearly

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complete file of reports and catalogues, from official records of legislative actions, and from articles in medical journals and newspapers. The American Medical Directory classifies the New England Female Medical College as homeopathic, but the author states (page 87) in discussing its graduates that "A point of interest is whether these graduates, educated in an institution where regular (allopathic) therapeutics was taught, continued to be regular in their practice or became allied with one of the medical sects. . . . The practice of women physicians was almost exclusively with women and children with whom the mild and tasty medicaments of homeopathy were popular. Therefore, it was not surprising that some of these graduates adopted homeopathic methods." Only 98 women received the degree of Doctor of Medicine from this college before it merged with the Boston School of Medicine in 1874.

**Hemodynamics in Failure of the Circulation.** By W. B. Youmans, M.D., Ph.D., Professor of Physiology, Department of Physiology, University of Oregon Medical School, Portland, and A. R. Huckins, M.S., M.D., Research Assistant, Department of Physiology, University of Oregon Medical School, Portland. Publication number 88, American Lecture Series, monograph in American Lectures in Physiology, edited by Robert F. Pitts, M.D., Ph.D., Professor of Physiology, Syracuse University College of Medicine, Syracuse, N. Y. Cloth. $2.75. Pp. 71, with 10 illustrations. Charles C Thomas, Publisher, 301-327 E. Lawrence Ave., Springfield, Ill.; Blackwell Scientific Publications, Ltd., 49 Broad St., Oxford, England; Ryerson Press, 299 Queen St., W., Toronto 2B, 1951.

This monograph describes in simple terms the present concept of heart failure. The authors have restricted the term "heart failure" to those conditions in which the heart is primarily involved. For those disturbances of circulation in which venous congestion is prominent and the cardiac output is increased, such as in the case of arteriovenous aneurysm and the so-called "beri beri heart," the term "chronic venous congestion without heart failure" is used. To one who has always been disturbed by the term "heart failure with high cardiac output" in cases in which the heart was not primarily involved, this new method of classification makes sense.

In order to make the total presentation as simple as possible, the authors have wisely refrained from long discussions on controversial matters. However, a bibliography consisting of two hundred references is available for those who wish to read further on the subject. The role of the kidney in the picture of congestive heart failure is well presented. The confusing terms of "backward" and "forward" failure are wisely omitted. Diagrams are used to show the effects of heart failure and schematically indicate the mechanisms concerned in the total picture. This monograph will be of considerable value to medical students and to those physicians who have not had an opportunity to review the voluminous literature on this subject in the past few years. It could also be read with profit by those who are working in the field of cardiovascular diseases.

**Klinische Chemie und Mikroskopie: Ausgewählte Untersuchungsmethoden für das medizinisch-chemische Laboratorium.** Von Dr. Lothar Hallmann. Sixth edition. Cloth. 24.60 marks; $5.85. Pp. 594, with 173 illustrations. Georg Thieme, Diemershaldenstrasse 47, (14a) Stuttgart O, 1950.

This well-organized book gives the information usually available in the standard textbooks of laboratory diagnosis in this country. The initial chapter deals with general technique of the clinical laboratory, with a special section devoted to reagents. The chapters following deal with the examination of saliva, gastric and duodenal content, feces, sputum, exudate, transudate, content of cysts and prostatic secretion, urine, spinal fluid, and blood. Included is a special chapter on normal values in blood, urine, and spinal fluid, and another one is devoted to micromethods. In an appendix, relatively few references to the literature (mostly German) are given and technical terms are explained. The entire presentation concentrates on description of methods, with relatively little theoretical discussion. In the selection of the methods, clinical application is kept in mind. Much use is made of tables and very good illustrations. The book is unusually well organized, and a surprising amount of information is compressed into a small space. Nevertheless, it mainly reflects the methods used at present in Germany, which are not necessarily identical with those used widely in the United States. Consequently, it is of only little value in the American laboratory.

**Handbuch der Virusforschung.** Herausgegeben von Prof. Dr. R. Doerr und Prof. Dr. C. Hallauer. II. Ergänzungsband. Bearbeitet von F. M. Burnet, et al. Cloth. $16.50. Pp. 425, with 187 illustrations. Springer-Verlag, Mölkerbastei 5, Wien 1, 1950.

This handbook contains a series of reviews by an international group of experts. Some chapters contain practical technical information; others discuss special problems such as the phenomenon of hemagglutination, virus pneumonia, variation in influenza viruses, and immunity in influenza. Almost half of the volume is devoted to an excellent review of electronmicroscopy in virus research by Helmut Ruska. This investigator compares electronmicroscopy with other methods, including other microscopic procedures, used in research on viruses. After a thorough discussion of principles, characteristics, limitations, and methodology, there is a report of findings of electronmicroscopic studies on protozoa, spirochetes, bacteria, rickettsiae, and viruses. This review contains a large number of very fine photographs of these agents prepared by the author and other investigators in Europe and America. The bibliography consist of more than 600 references.

A good bit of useful information is given in the chapters on roller tube tissue culture by A. E. Feller, on drying of viruses by E. W. Flosdorf, and application of reflected light and dark-field microscopy by M. Kaiser and P. Vonwiller. There is also a discussion of variation in influenza viruses by F. M. Burnet. This problem is of vital importance not only from the standpoint of better understanding of the nature and behavior of these viruses, but also from the point of view of practical considerations in the control and prevention of influenza as illustrated by the subsequent chapter by T. Francis Jr., who presents a timely subject, immunity and vaccination in influenza. A discussion bearing somewhat on the virus of influenza but covering comprehensively a phenomenon exhibited by several viruses and other agents is contained in a chapter by C. Hallauer. M. D. Eaton gives an interesting and extensive review of virus pneumonia and pneumonitis viruses of animals which are transmissible to man. The chapters by the European authors are in German; those by the American and Australian workers are in English. In addition to a table of contents, there is also a composite subject index.

**Die suprapubische Prostatektomie mit primärem Blasenverschluss nach eigener Methode: Vorbereitung, Technik, Nachbehandlung.** Von Univ.-Prof. Dr. Theodor Hryntschak, Vorstand der urologischen Abteilung der Wiener städtischen allgemeinen Poliklinik. Cloth. $5.70. Pp. 166, with 35 illustrations. Wilhelm Maudrich, Spitalgasse 1B, Wien 71, 1951.

This monograph is limited to a discussion of suprapubic prostatectomy with primary closure according to the technique devised by the author. A good historical review of the various methods used in bladder closure is presented, and as far as the author is able to determine, he is the first person to use purse string sutures in closing the bladder. In some instances he uses a cross stitch over the first purse string suture, over which he uses another purse string suture.

The author stresses the importance of close cooperation with the internist in the study of the cardiovascular system before the operation. In the preoperative preparation of the patient, he prefers to avoid the use of the indwelling catheter when there is no infection. He believes the use of the indwelling catheter predisposes to embolism and thrombosis, two conditions that play a large role in the cause of deaths. The importance of meticulousness in the postoperative management is stressed.

On the subject of bleeding after the operation, the author differentiates between the slight ooze from the wound bed, which can be controlled with a syringe at the patient's bedside, and the profuse bleeding, which necessitates opening the bladder to control it. The slight ooze from the prostatic bed he designates as "bleeding on the day of operation."

The author gives a detailed description of his operation and the manner in which it differs from the operation first proposed by Dr. Harris of Australia. The monograph contains a report of 100 cases of suprapubic prostatectomy with primary closure. There were four deaths, three of which were due to pulmonary embolism, and one was due to sepsis. In only one case did a suprapubic fistula develop. The author has also used this method of primary closure of the bladder in cases of foreign bodies,

bladder stones, and bladder tumors. These are illustrated with brief case reports.

This monograph has been prepared in great detail. The printing is very good, and the illustrations, of which there are thirty-five, are excellent. The author has a vast experience and is well qualified to write this kind of book. To those interested in this type of prostatectomy, this book will be of great value.

**Congenital Heart Disease.** By James W. Brown, M.D., F.R.C.P., Physician to Grimsby General Hospital, Grimsby, England. Second edition. Cloth. $6; 30s. Pp. 344, with 128 illustrations. Staples Press, Ltd., Mandeville Place, London; 70 E. 45th St., New York 17, 1950.

In the eleven years since the first edition of the book was published, there have been so many important advances in diagnosis and treatment that this edition is largely rewritten and is, therefore, practically a new book. The author has described his own observations based on a large series of cases followed for many years. He has also quoted extensively from the literature and has included a well-chosen, fairly complete bibliography of the important literature. The common abnormalities, particularly those that can be recognized clinically, are given more prominence than rare lesions that can be diagnosed only at autopsy. Although information gained by catheterization is discussed adequately, angiocardiography is only briefly mentioned, chiefly because the author, as he himself states in the preface, has had little personal experience with the technique. The book is easy to read, even in the sections devoted to the more complicated congenital defects. The illustrations are simple and well chosen. The monograph is, therefore, a good reference book, not only for the cardiologist, but for any physician who has occasion to see a patient with congenital heart disease.

**Human Biology.** By George Alfred Baitsell, Colgate Professor of Biology, Yale University, New Haven. Second edition. Cloth. $6. Pp. 730, with 361 illustrations. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18; Aldwych House, Aldwych, London, W.C.2, 1950.

This book presents the subject of biology from the standpoint of that most interesting of organisms, man. The phenomena of animal and vegetable life are interpreted as to their significance to man and their resemblances to processes in the human body, and practically every aspect of human anatomy and physiology is compared with analogues among other living things, large and small. The treatment is kept from becoming unduly general and abstract by a wealth of illustrations, constant reference to specific examples in the text, and a remarkable 153 page appendix. This last consists largely of verbatim quotations from especially famous or well-written sources, such as Beaumont's description of the observations on St. Martin.

Very few minor faults are to be found; an example is the description of the stomach on page 56. The author would also be justified in adhering more consistently to the metric system, since the book is for college students. On the whole, it is a most commendable and substantial work.

**Trends in Gerontology.** By Nathan W. Shock, Chief, Section on Gerontology, National Heart Institute, United States Public Health Service. Cloth. $2.50. Pp. 153, with 12 illustrations. Stanford University Press, Stanford University, California, 1951.

Gerontology is defined as "the scientific study of the phenomena of aging." In this readable, informative book, Dr. Shock surveys present day problems, programs, and plans concerning older persons. An expansion of a preliminary report submitted to Stanford University in 1949, this volume discusses twelve topics: population, employment, income and retirement, health insurance, housing, education (public and professional), community programs, present activities in medical research, laboratories and institutions that are engaged in or planning research, needs in research, and a detailed outline of how an institute in gerontology should be organized and what it could do. Thus the chief emphasis is on research. Not a clinical volume, this book excels as a summary and discussion of statistical, social, economic, community, and research phases of the "grave social problem" created by the rapid increase in number and proportion of our population of older persons. The book is noteworthy if only for its summary of current research in the biology, physiology, medicine, and sociology of aging.

**Cornell Conferences on Therapy. Volume IV.** Edited by Harry Gold, M.D., Managing Editor, and others. Cloth. $3.50. Pp. 342. The Macmillan Company, 60 Fifth Ave., New York 11, 1951.

The Cornell Conferences on Therapy were inaugurated in 1937 as a joint venture of the departments of medicine and pharmacology. The intention was to take up such topics as seemed of particular interest at the time. A conference is usually initiated with introductory remarks, but the discussion is, for the most part, extemporaneous. The aim, according to its editors, was limited to the exploration of some aspects of special interest, analysis of the evidence on controversial points of opinion and practice, elaboration of the physiologic, pharmacologic, and chemical basis of therapeutic measures, and presentation of these on the level of the general practitioner. After the first year's experience, it was felt that a permanent record would enhance the value of these conferences. Accordingly, the proceedings were taken down by a stenotypist. The next step in the evolution of these records was their monthly publication from 1937 to 1940 in THE JOURNAL. In 1940, the publication was transferred to the *New York State Journal of Medicine* and still later to the *American Journal of Medicine*. Since 1946, the plan was adopted to print one conference every other month in the *New York State Journal of Medicine* and one every other month in the *American Journal of Medicine*. The final step in the evolution of the conferences was their annual publication in a volume reporting a group of conferences selected for their quality and value.

The "conferences" published in this volume reflect the variety of topics that come under discussion. "Household Poisonings," "Management of Disorders of Cardiac Rhythm," "Medical Management of Hypertension," "Therapeutic Uses of Gamma Globulin," and "Management of the Menopause" are some of the fifteen topics covered in this volume. The nature of the discussion is preeminently practical. The information which is supplied by experts in a given field is valuable and is up-to-date. Each conference is terminated by a summary. The small volume should prove of great interest both to the internist and to the general practitioner.

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**The Student's Handbook of Surgical Operations.** By Sir Frederick Treves, Bart., G.C.V.O., C.B., Ninth edition, revised by Sir Cecil Wakeley, K.B.E., C.B., D.Sc., Senior Surgeon to King's College Hospital, London. Cloth. $5.50. Pp. 580, with 269 illustrations. Paul B. Hoeber, Inc. (Medical Book Department of Harper & Brothers), 49 E. 33rd St., New York 16, 1951.

The popularity of this book is attested by the fact that since its first appearance in 1892, it has gone through eight additional publications. The new edition has been thoroughly revised, many new illustrations have been added, and the text has been brought up-to-date. Many of the old illustrations have been replaced by modern ones. This handy little volume of some 500 pages covers the entire field of surgery in a somewhat condensed but otherwise satisfactory manner so far as the student is concerned. In conformity with the older textbooks, part one consists of "Ligature of Arteries." The importance of this procedure in the light of modern surgery is probably secondary. This particular chapter could be left out. The print and the illustrations are satisfactory.

**Health and Human Relations in Germany.** Report of Conference on Problems of Health and Human Relations in Germany, Nassau Tavern, Princeton, N. J., June 26-30, 1950. Paper. $1. Pp. 207. Josiah Macy, Jr. Foundation, 565 Park Ave., New York 21; National Association for Mental Health, 1790 Broadway, New York 19, 1950.

This is a report of a conference attended by persons who have done work in Germany in connection with the United States Military Government, now High Commission for Germany, UNESCO, some British and French representatives, and a few Germans. Although "health" is first in the title, most of the volume is devoted to education and the function of the democratic process in relation to the German character. The report ought to be of wide interest but probably will not be, because the indications are that, despite the recommendations of qualified persons who have been in Germany, the policy of the United States seems to be constant curtailment of personnel and funds through which human relations and health progress in Germany could be fostered.

# QUERIES AND MINOR NOTES

## SUDDEN SEVERE PRECORDIAL PAIN

To the Editor:—*Eight months ago a patient experienced sudden, severe, persistent precordial pain. He had some ashy pallor, bradycardia followed by tachycardia and temperature of 100 F. on admission to the hospital. There was no dyspnea; the skin was cool, clammy and moist. He had a duodenal ulcer of 18 months' duration, although positive x-ray findings were noted one month preceding sudden onset of pain in the chest. Sedimentation time was 15 and the leukocyte count 8,500; the temperature was normal in 12 hours. An electrocardiogram showed slight elevation of the RS-T interval. The patient was out of bed in two weeks and home in four weeks. An unusual symptom was prolonged tenderness of the chest wall anteriorly and posteriorly and inability to lie on either side. Chair back pressure on the left scapula was painful, causing acute soreness. After eight months, however, the soreness disappeared. The patient used banthine* for the duodenal ulcer but discontinued it because of precordial distress, similar to that induced by exercise. The cardiologist was not convinced that the patient had a coronary occlusion. Heparin and dicumarol were used. Graduated exercise is now in progress, with discontinuance short of fatigue. Do you concur with the general plan of treatment? How long should the rest period be continued before gradual return to light activity? I have never encountered a case before with such acute chest wall tenderness.*

*Everett D. Hockenberry, M.D., Coral Gables, Fla.*

Answer.—It seems that acute coronary occlusion with little or no myocardial infarction can best explain the severe illness eight months ago. The tenderness of the chest wall is not easily explained, because most patients with disease of heart or lungs do not have such tenderness. Nervously sensitive persons, however, who are subject to neurocirculatory asthenia frequently show tenderness of the chest wall. Rest in bed can result in muscular or joint soreness, due perhaps to posture or to actual arthritis, myositis or neuritis, generally temporary in duration. When full activity is resumed, these symptoms usually clear up. It would be important to know the details of serial electrocardiograms, in which leads the RS-T intervals were elevated, and what progressive changes were shown in repeated records.

Another possible explanation of the prolonged pain and tenderness around the left chest (back as well as front) is that of an initial or primary or of a complicating herpes zoster although no note was made of any skin eruption therefrom if it was present. A direct nerve origin of these troublesome symptoms seems quite logical.

The therapy of the attack seems to have been adequate. Advice as to future activity must depend on the coronary reserve. If certain physical or nervous strain brings on angina pectoris, such strain should be avoided. Care must be taken to rule out other causes of discomfort, such as neurocirculatory asthenia and the peptic ulcer itself. It would not seem necessary to continue the rest period for the heart now except for avoidance of strains that might produce angina pectoris. It does not take many weeks for the complete healing of a myocardial infarct. Sometimes, however, months or years pass before angina pectoris yields to the natural development of an adequate collateral circulation, and sometimes angina pectoris recurs persistently for the duration of life but can be tolerated by avoidance of strain and the use of nitrites.

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The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards cannot be answered. Every letter must contain the writer's name and address, but these will be omitted on request.

## PERSISTENT SALTY TASTE

To the Editor:—*A 57 year old white man has had an annoying salty taste in his mouth for three years. The symptom started while he was having teeth removed for pyorrhea and persisted after removal of all teeth and after he was fitted with full upper and lower acrylic dentures. It is so annoying that he constantly sucks on candy or chews gum. He uses no salt on his food. He is in good health except for a traumatic glaucoma, for which he has been using 25 per cent pilocarpine, one drop daily in the right eye for seven years. The blood is normal except for 5 per cent eosinophils. The urine is normal. No oral lesions or systemic diseases were detected on physical examination. I should like an opinion on diagnosis and suggestions for further study.*

*Robert A. Marks Jr., M.D., Buffalo.*

Answer.—If the timing of the onset of symptoms is correct and the mouth condition is normal, several possible causes can be ruled out. The constant salty taste should have no relation to the previous use of pilocarpine or the later use of dentures. Pilocarpine produces an increase in saliva, but the dose in use is so small and infrequent that it is not probable that it could be effective on a single type of taste bud in the mouth. The salty taste aberration could not be explained on a basis of nerve change or injury at the time of extraction. Taste changes may occur between the ages of 50 and 70 as a part of senescence but are usually due to lowered sensitivity, especially if the palate is covered by a plate. Subclinical glossitis can produce taste abnormality, as described in the answer to a query in The Journal of Sept. 17, 1949 (page 237). Saliva contains taste-activating hormones, but the use of salivary depressants and stimulants to determine the effect of saliva volume on taste might disturb the glaucoma. The persistence of the salty taste suggests a psychoneurotic etiology, and a capable neuropsychiatrist could check both the nerve and psychic aspects.

## DUODENAL ULCER IN DIFFERENT RACES

To the Editor:—*Is there any particular race subject to duodenal ulcer, and what are the ratios in the different races?*

*Benjamin Berger, M.D., New York.*

Answer.—Data concerning the racial incidence of duodenal ulcer are not as plentiful as is indicated by the importance of the question. In 1945, L. G. Rowntree, in analyzing a large number of selective service registrants, reported a 0.52 per cent incidence of peptic ulcer in white troops as compared with 0.14 per cent in Negroes. A detailed analysis of this problem is presented in the book on peptic ulcer by A. C. Ivy, M. I. Grossman and W. H. Bachrach (New York, The Blakiston Company, 1950). According to these authors, the findings obtained as a result of a large series of autopsies performed on a group of Chinese and Javanese male laborers in Sumatra revealed profound differences. Thus in 1,370 autopsies on the Chinese laborers, 151 ulcers or scars of ulcers were found, an incidence of 11 per cent. On the other hand, in 1,269 Javanese laborers examined postmortem, ulcers or scars of ulcers were found in only 8, an incidence of 0.6 per cent. The authors quote Bonne as noting that absence of visible emotion is rather characteristic of the Malay race. This study in Sumatra is valuable in that the comparison was made between two races with subjects of the same sex and similar occupation. With the increasing evidence that environmental factors, such as occupation and subjection to stress and strain, play such an important role in the disease, before one can attribute variations in incidence of peptic ulcer to differences in race, it is essential that comparisons be made

between persons of the same sex and subjected to the same environmental pressures. Although a general impression exists that the incidence of duodenal ulcer in Negroes in the United States is significantly less than in the white race, this difference has become much less pronounced when environmental factors have been about the same.

## BONE CYSTS

To the Editor:—*A 17 year old boy is 12 pounds (5 Kg.) overweight; his height is 70 inches (178 cm.), blood calcium 10.6 mg. and blood phosphorus 3.4 mg. X-ray reveals a normal pituitary; the lower ends of both femurs show small partly healed bone cysts and slight osteoporosis; the lower end of the right tibia shows a solitary, partly healed bone cyst. The diagnosis probably is hyperparathyroidism (von Recklinghausen), but the parathyroids are not palpable. Would use of calcium gluconate be advisable? A diet rich in calcium and phosphorus was given. What is the best treatment? How can one exclude a tumor or hyperplasia of the parathyroid?*

*Jacob Aisenstat, M.D., New York.*

This inquiry was referred to two authorities, whose respective replies follow.—Ed.

Answer.—With normal serum calcium and serum phosphorus levels, hyperparathyroidism is unlikely. There is nothing in the query to suggest that there is generalized demineralization of bone. One would have to consider polyostotic fibrous dysplasia. The most likely diagnosis from the facts at hand is neurofibromatosis with bone involvement. The lower ends of the femurs are apt to be involved in this condition. The same is true of the lower thirds of the tibias. The fact that the parathyroids are not palpable is of no significance in ruling out hyperparathyroidism. The treatment in this case depends on the diagnosis. The diagnosis would be strengthened if café au lait areas of pigmentation or subcutaneous neurofibromas could be demonstrated.

Answer.—One should make calcium balance studies in order to observe the excretion of calcium on an inadequate calcium intake. Concentration of calcium and phosphorus in serum appear to be within normal limits, but further studies should be made. Hyperparathyroidism may be present without a palpable tumor in the neck. Enlarged parathyroid glands may be found in the mediastinum or buried in the thyroid. Parathyroid tumors may be so small that they are difficult to palpate even though they are present in the usual location. Hyperparathyroidism may be associated with hyperplasia of the parathyroid glands without much enlargement. The development of bone cysts does not necessarily mean that hyperparathyroidism is present, but they do mean that every effort should be made to exclude this condition. If hyperfunction of the parathyroid glands is not present, it would seem logical to administer fairly large doses of calcium supplemented by vitamin D.

## NYMPHOMANIA

To the Editor:—*A 30 year old married woman had a subtotal hysterectomy seven years ago. Three months ago she complained of irritability and hot flashes and was given estrogens with relief. She then complained that she had had excessive libido for six years. On cessation of treatment with estrogens, hot flashes returned but excessive libido remains. She states that full orgasm is reached at each intercourse and that she is forced to awaken her husband two to three times per night to satisfy her desire. She cannot go to dances and even avoids men on the street, as this produces painful pelvic congestion. Pelvic examination reveals no masses. Please help me with the etiology of this condition and treatment in this case.*

*M.D., Colorado.*

Answer.—It was unfortunate this woman had her uterus removed when she was only 23 years of age, but most likely this operation has nothing to do with the present disturbance. The patient has nymphomania; this is not related to the use of estrogens. The usual basis for this serious condition is a psychic disturbance; hence psychotherapy should be instituted without delay.

## CESAREAN SECTION

To the Editor:—*Is there any exception to the rule "Once a cesarean section, always a cesarean section?"*

*Walter A. Landry, M.D., Chester, Pa.*

Answer.—The dictum, "Once a cesarean section, always a cesarean section," is by no means universally followed. Several reports have been published dealing with cases in which vaginal delivery was carried out after previous cesarean section.

J. P. Greenhill in the 1949 "Year Book of Obstetrics and Gynecology," page 227, says, "Whenever a cesarean section is performed, the question arises: Shall a woman who has once had a cesarean section always have a cesarean section? Formerly I delivered many women through the vagina who had previously had cesarean sections. However, the risk from cesarean section is so slight that I do not believe it worthwhile to chance rupture of the uterus, regardless of what the indication was for the first operation. I therefore almost routinely perform a repeat cesarean section. Of course, if a baby is small in a subsequent pregnancy and the woman goes into labor spontaneously and if she is in a hospital where she can be watched carefully, labor may be permitted to proceed. But even under these conditions, I would feel ill at ease, despite the excellent results obtained by some obstetricians. One can never be certain that rupture will not take place, though rupture of the uterus during pregnancy is extremely rare after cervical cesarean section. On the other hand, after classic operation, rupture of the uterus at seven to nine months is not too uncommon. The death rate from rupture is extremely high, whereas that from repeat cesarean section is almost negligible, because most of these operations are elective and performed when the patient is in good condition."

## DEAD FETUS

To the Editor:—*A young bipara was delivered of a dead, slightly macerated fetus. Her first baby was normal, and there were no complications during her period of gestation. Her second pregnancy was equally uncomplicated. She went to full term; she felt violent fetal activity three days before the birth of this child and none afterward. The delivery was uneventful. Is it possible that this infant started to breathe in utero at the time she felt the violent fetal activity? On delivery there was discolored amniotic fluid coming from the lungs.*

*M.D., Pennsylvania.*

Answer.—In most cases, like the one described, it is not possible to determine the exact cause of death of the fetus even when an autopsy is performed on the macerated fetus. In a few instances there is separation of the placenta, but nearly always there is some external bleeding to indicate the condition. Furthermore, in such cases, when the placenta is delivered, some blood clots will be found attached to the maternal surface of the placenta. Discolored amniotic fluid is nearly always present when the fetus is macerated. The finding of amniotic fluid in the lungs or escaping from the lungs has no significance, because amniotic fluid can be aspirated into the lungs of normal babies owing to the intrauterine respiratory movements which most likely occur in all babies during their intrauterine existence.

## MANURE ON A FOOTBALL FIELD

To the Editor:—*The school board is contemplating using barnyard manure to fertilize the football field. What is the possibility of tetanus being contracted by the players?*

*A. L. Delaney, M.D., Liberty, Texas.*

Answer.—The use of manure on a football field is definitely contraindicated, in view of the high incidence of tetanus following contamination of skin injuries with the spores of Clostridium tetani contained in manure. Moreover, it would be desirable that all the players be immunized with tetanus toxoid in order that the possibility of their contracting clinical tetanus under all conditions of play be minimized.

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## DWARFISM

TO THE EDITOR:—*A 4 year old girl, has been well except for chickenpox and whooping cough at the age of 3 years and at five months, respectively. Birth weight was 7 pound 3 ounces (3,260 Gm.). Since the age of 1 year, the child has grown very little. Her present weight is 22 pounds (10 Kg.). Physical examination disclosed no abnormalities, and the child was mentally alert. Four repeated urinalyses have shown albumen (3 plus) and sugar (3 and 4 plus) with no acetone and normal specific gravity and miscroscopic findings. Fasting blood sugar was 92 mg. Medical advice was sought mainly because of the child's poor appetite. Please suggest further diagnostic procedure and treatment.*

*M.D., New Mexico.*

ANSWER.—A 4 year old child weighing only 22 pounds must be extremely short and have the general conformation of a dwarf. The height-weight-age tables of Bird T. Baldwin and Thomas D. Wood present the lowest weight for a female of 4 years and under 5 years as 25½ pounds (11.53 Kg.) with a height of 33 inches (83.82 cm.) Dwarfism may fall into a number of categories as (*a*) ateliosis, or true infantilism, characterized by childish skeletal, genital, and mental development, (*b*) primordial dwarfism, present at birth and with normal osseous, sex and mental development and (*c*) renal rickets or dwarfism, which is not true dwarfism but is due to impairment of bone growth from hyperparathyroidism. There are associated urinary disturbances with renal rickets, including glycosuria. Other types are achondroplastic dwarfism, cretinism from congenital hypothyroidism and endocrine dwarfism, particularly that due to hypopituitarism. Other causes of dwarfism, or retarded growth, are pancreatic deficiencies, sprue, celiac disease, encephalitis and various bone dystrophies.

The cause of the glycosuria with a fasting blood sugar within normal range (70-100 mg. per 100 cc.) may be diabetes mellitus. Renal diabetes, fright, excessive consumption of easily assimilable carbohydrates, renal dwarfism and pentosuria may be other causes of glycosuria. For differentiation, the type of sugar should be identified, and several glucose tolerance tests should be performed in case the curve suggests true diabetes.

Albuminuria may be due to various causes, among which are orthostatic albuminuria, which is symptomless; pyuria; nephritis; nephrosis; renal dwarfism, and Bence-Jones proteinuria.

The three major signs presented, dwarfism, glycosuria and albuminuria are all common to renal dwarfism. If the diagnosis of this condition can be established, nephritic therapy, large amounts of vitamins A and D, sufficient alkali, particularly potassium, and removal of a parathyroid tumor, if present, would constitute adequate treatment. If the diagnosis of diabetes mellitus is established, hospitalization with an attempt to control the disease by proper diet should be made before insulin therapy is instituted. The normal urinary specific gravity would make the diagnosis of nephritis or diabetes doubtful.

## HORMONE TREATMENT FOR BLEEDING FIBROID UTERUS

TO THE EDITOR:—*Will any hormone treatment—estrogen or testosterone—stop bleeding from a fibroid uterus? Will it affect the size of the fibroid?*

*Lewis W. Berry, M.D., Chelan, Wash.*

ANSWER.—Both estrogen and testosterone can stop bleeding from a fibroid uterus temporarily. Likewise, enormous amounts of testosterone can produce a slight decrease in the size of fibromyomas, but this also is temporary. It is useless to employ endocrine therapy to reduce the size of a fibroid uterus, because the necessary doses are far beyond safety. In almost all instances in which any appreciable effect can be observed on a fibromyomatous uterus, signs of virilism appear. These include excessive hair growth on the face, change in voice and enlargement of the clitoris. Bleeding associated with a fibroid uterus does not arise in the myomas but comes from associated changes in the endometrium. In all instances of profuse or irregular bleeding, regardless of whether fibromyomas are present, cancer must be ruled out.

## EXCESS GAS IN INTESTINE

TO THE EDITOR:—*A patient continually complains about gas formation in the intestines. He has had a complete examination, with negative results except for a tremendous number of Trichomonas in the stool. Years ago he spent a long time in a tuberculosis sanitarium. Could these Trichomonas become pathogenic? What would be the treatment? I have been giving him turpentine 0.6 cc. three times a day. The patient has no dysentery, but gas formation is often accompanied by unformed stools.*

*M.D., Illinois.*

ANSWER.—The role of Trichomonas vaginalis or hominis as intestinal pathogens has not been clearly established. Usually, if a careful stool examination by a qualified observer is made on a patient with diarrhea or dysentery, some other cause is found. As yet no cyst forms of T. hominis have been discovered in solid stools.

Verified cases of intestinal infection due to Trichomonas vaginalis apparently have not been reported, and it is possible that the organism mentioned in this case is actually T. hominis, since these varieties are morphologically similar. The treatment of Trichomonas hominis infection is unsatisfactory; however, the most efficacious agents are diiodohydroxyquinoline (diodoquin®) and carbarsone as used in amebiasis. A trial of diiodohydroxyquinoline therapy would be of interest in the case described.

The writer is referred to the following sources for more detailed information: Portis, S. A.: "Diseases of the Digestive System," Lea & Febiger, Philadelphia, 1944 ed. 2, pp. 592-595; Belding, D. L. "Textbook of Clinical Parasitology," D. Appleton-Century Co., New York 1942; Jordan, E., & Burrows, W. "Textbook of Bacteriology, ed. 14 revised, W. B. Saunders Co., Philadelphia, 1944.

## LACTOSURIA

TO THE EDITOR:—*Is there a simple office method for distinguishing between lactosuria and glycosuria in obstetric patients? At what stage of pregnancy is lactosuria to be expected?*

*M. M. Young, M.D., Crossville, Tenn.*

ANSWER.—There are three ways of determining the difference between lactosuria and glycosuria. The tests for lactosuria are (1) the phenylhydrazine test (crystal test), (2) the Rubner (color test) and (3) the fermentation test. The technics of these tests may be found in books on laboratory procedures, for example, "Clinical Diagnosis by Laboratory Methods" by J. C. Todd and A. H. Sanford, and "Manual of Clinical Laboratory Methods" by O. E. Hepler.

The finding of sufficient lactose in the urine to produce a faint Benedict reaction occurs in about 1 to 2 per cent of pregnant women before the last six weeks of gestation. During the last six weeks of pregnancy the frequency of lactosuria is about 7 or 8 per cent. On the day before delivery the incidence is about 30 per cent. Of course, lactosuria is much commoner and more pronounced after delivery. During the first few days of the puerperium, the majority of women show lactosuria, often in large amounts. This fact must be taken into consideration when diabetic women are studied after delivery.

## OPHTHALMIC OINTMENT BASE

TO THE EDITOR:—*What is the most suitable ophthalmic ointment base? Is aquaphor® and water all right?*

*Walter Weinberger, M.D., Juniata, Altoona, Pa.*

ANSWER.—As a suitable ophthalmic ointment base aquaphor® with water is usually satisfactory. However, in many instances anhydrous bases are more suitable and are required with certain drugs commonly used for local application to the eye. Such drugs as penicillin and eserine will fit in this category. For this reason, a base consisting of 25 per cent wool fat, 50 per cent petrolatum and 25 per cent liquid petrolatum might be considered more suitable. This base has proper consistency and spreading action. In many instances aqueous bases are not desirable, since the liberation of the drug from the base is too rapid to accomplish suitable therapeusis. In these instances the base delineated above is more suitable.

## BAGS UNDER THE EYES

To the Editor:—*In* The Journal *of March 17 (page 858) Dr. Ursula Mandel asks for the cause of bags under the eyes and you give the exact replies of four authorities. All four of them may be correct in about one case out of a thousand. In the other 999, the cause is a familial tendency to localized lipodystrophy, with resultant partial herniation of encapsulated fat from within the intraorbital areas into the loose conjunctival tissue, occurring even in "teen agers."*

*None of the authorities are quoting a remedy or curative procedure. Yet the cure is simple, direct and permanent. It consists of surgical removal of that amount of fat that is deemed excessive. Plastic surgeons interested in this phase do it regularly. The accompanying photographs illustrate the*

*bagginess complained of (top), immediate postoperative display of fat overlying the area from which it was removed from upper and lower eyelids (center) and the results some weeks postoperatively (bottom).*

*H. O. Bames, M.D.,*
*727 West Seventh Street,*
*Los Angeles 17.*

To the Editor:—*In* The Journal *March 17, 1951, in Queries and Minor Notes, there appeared answers to the following question: "What is the cause of 'bags under the eyes,' which often occurs in patients with no kidney trouble or other known causes of the unsightly condition?"*

The Journal *stated, "This inquiry was referred to four authorities, whose respective replies follow." I was surprised to find clinicel conditions listed, none of which actually and precisely answered the inquiry. In my practice as a plastic surgeon, I encounter this clinical state often. The "bags under the eyes" are not due to "edema," "muscle tone," "vasomotor states," "allergic responses," "familial traits," "atrophic changes in the epidermis or subcutaneous tissues." They are due to the presence of semiencapsulated periorbital adipose tissue which has protruded through a hiatus in the tarso-orbital fascia and can occur at any age, not only in elderly persons. The "adipose sac" varies in size, depending on whether or not the fat pad has become incarcerated. It is for this reason that daily changes, and changes throughout the day, in the size of these "bags" are often observed by the patients themselves.*

*I have referred to this condition as "infraorbital adipocele"; similarly, "supraorbital adipocele" occurs. For 20 years I have removed "bags under the eyes," of the type described above, by means of the following surgical procedure, which I have designated "tarso-orbital fasciorrhaphy."*

*Starting at the inner canthus, I make an incision through the skin parallel with and about 1 to 1.5 mm. below the margin of the lower lid. This is extended to the outer canthus and continues for about 1 cm. lateralward, being placed in one of the natural laugh lines to minimize the scar. The skin is then undermined to about the level of the lower bony border of the orbital cavity. The fibers of the orbicularis oculi are then separated just above this level. As soon as this is done, a mass of semiencapsulated adipose tissue bulges forward through a herniation in the tarso-orbital fascia. This herniation is then enlarged, and all the protruding fat is excised. The tarso-orbital fascia is then imbricated with two or three C silk sutures. The redundant skin is then drawn up over the lid margin and the excess removed. Starting at the inner canthus, I unite the wound margins with a continuous C silk suture. Some trimming of the skin will be necessary at the outer canthus to insure a smooth union. In my experience, this plastic surgical procedure completely and permanently remedies this defect.*

*Harold M. Holden, D.D.S., M.D.,*
*520 S. San Vicente Blvd., Los Angeles 48.*

## SPERMATOZOA AND VAGINAL ACIDITY

To the Editor:—*In reference to a Rhode Island physician's question, "Is it rare for pregnancy to result from a deposition of sperm on the vulva without intromission?" (J. A. M. A. 145:59 [Jan. 6] 1951). I should like to say that it is not only extremely rare but very likely impossible. The three instances of impregnation, of two married women and an unmarried girl, quoted from "A Text-book of Obstetrics" by Barton Cooke Herst, submitted by Dr. Walter A. Landry, do not prove anything. There are many cases of unruptured hymens after complete intromission and according to Williams (Obstetrics, ed. 5, New York, D. Appleton-Century Company, Inc., 1923). "In rare instances the injuries resulting from childbirth are extremely slight, and very exceptionally are entirely lacking." Elsewhere, however, Williams states, "Some years ago I saw a patient in whom conception had occurred through a hymen which presented only a pin-point opening. . . ." With respect to all cases without intromission, and even this last case mentioned by Williams, it is my conviction that at the time of ejaculation the external urinary meatus (opening of the fossa navicularis of the penis) is in direct apposition with the hymeneal opening and that semen is thus forced into the vagina itself.*

*G. Lombard Kelly, M.D.,*
*President and Professor of Anatomy,*
*Medical College of Georgia.*
*Augusta, Ga.*

## GANGLION ON WRIST

To the Editor:—*Recently in Queries and Minor Notes, Dr. Bernard Weiss, New York, inquired about the treatment of ganglion of the wrist and requested suggestions as to nonsurgical treatment. Your answer failed to mention that treatment with x-rays is successful in a high percentage of cases. The only drawback is that it leaves a small area of increased pigmentation at the site of the ganglion. In many persons this disappears; in others it does not. I see many patients with this condition, and I have operated on only two in the last five or six years.*

*Duncan C. McKeever, M.D.,*
*836 Bankers Mortgage Bldg.,*
*Houston 2, Texas.*

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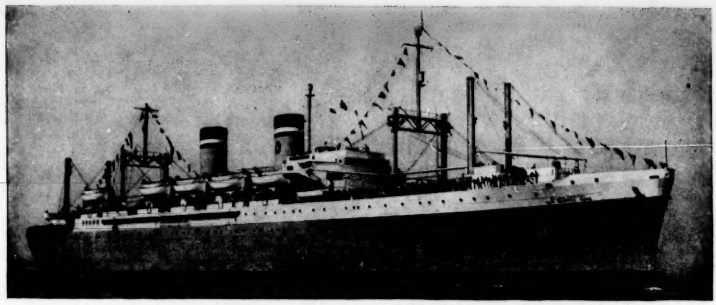

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*Chinn, H. I.; Noell, W. K., and Smith, P. K.: Prophylaxis of Motion Sickness: Evaluation of Some Drugs in Seasickness, Arch. Int. Med. *86*:810 (Dec.) 1950.

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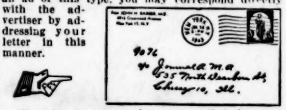

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**Because of the Independence Day Holiday, classified advertising forms for the July 7 issue will close 12 days prior to date of issue instead of the usual 11 days.**

### PHYSICIANS WANTED

WANTED — YOUNG SURGEON NEEDING PRECEPtorship; to work with 3 man group in Mid-West; approved experience; surgical board members; doing large volume; excellent experience and instruction; good salary, depending on qualifications. Box 1401 C, % AMA.

CALIFORNIA COUNTRY DOCTOR WISHES RELIEF physician; for 1 year beginning next October; steady year round practice; healthful mountain climate; attractive home with clinic attached; would require only house rent; full particulars on request. Box 1410 C, % AMA.

WANTED — GENERAL PRACTITIONER; TOWN OF 3000; 1 hour from Milwaukee; leaving because of health; 1 doctor in town; factory employing 1300; 3 hospitals near-by; good hunting, fishing; office fully equipped. Box 1409 C, % AMA.

**GENERAL PRACTITIONER — GRADUATE COMpleting internship recently; interested primarily in internal medicine; no surgery experience necessary; salary or partnership; available immediately. Box 1405 C, % AMA.**

FULL TIME ASSISTANT PATHOLOGIST — TO ENlarge attending staff, Medical College of Virginia; salary $6500 and upward, depending on experience. Write: Director of Surgical Pathology, 1200 East Broad St., Richmond, Virginia. C

*(Continued on page 40)*

V 146
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WHAT EVERY SMOKER WANTS

# ...for You

# Mildness *Plus*

## No unpleasant After-Taste

**OVER 1500 PROMINENT TOBACCO GROWERS SAY:** "When I apply the Standard Tobacco Growers' Test to cigarettes, I find Chesterfield is the one that smells Milder and smokes Milder."

**A WELL-KNOWN INDUSTRIAL RESEARCH ORGANIZATION REPORTS:** "Of all brands tested, Chesterfield is the only cigarette in which members of our taste panel found no unpleasant after-taste."

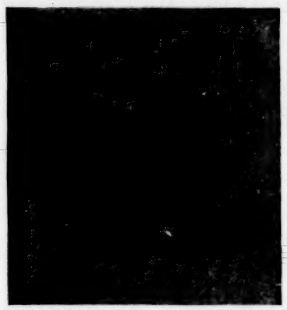
*"For me - it's Chesterfield ...they give me the most for the money!"*

See DAN DAILEY *Starring in*
"I CAN GET IT FOR YOU WHOLESALE"
*A 20th Century-Fox Production*

# ALWAYS BUY CHESTERFIELD

Copyright 1951, Liggett & Myers Tobacco Co.

Good Growth



Good growth, reflected in the infant's weight gain and tissue turgor, is favorably influenced by easy, uncomplicated digestion and assimilation of feeding.

SIMILAC

*can help assure simplicity of digestion because*

SIMILAC

is so completely modified that it possesses the same zero curd tension as human breast milk.

SIMILAC DIVISION
M & R Laboratories
Columbus 16, Ohio

## TONICS AND SEDATIVES

*This column is maintained by its readers. Contributions are welcome.*

Cub Reporter—"I'd like some advice, sir, on how to run a newspaper."

Editor—"You've come to the wrong person, son. Ask one of my subscribers."

*t & s*

From the *Daily Californian:*

LETTERS TO THE ICE BOX
DIANETICS CURE

*To the Editor:*

*I should make a correction of my earlier Dianetics article. The case reported as Hodgson's diseases is actually Hodgskin's disease; which I'm still informed is a form of cancer.*

*After injuries in the war, the person developed a chronic cough and swollen lymph glands. With extreme pain, an almost fatal cough, complete mental confusion, and, unable to absorb food, he had become immune to all forms of therapy, and had been placed in the terminal ward of the hospital to die.*

*After two months of Dianetic processing he was released from the hospital and has no medical attention since. All symptoms of the disease are gone, only an infrequent cough and no appreciable gain in weight lately (the auditor is worried about this, although there has been increased of about 40 pounds and the person eats like a horse).—Jack Forbes.*

*—John S. Horan*

*t & s*

A Woman who prided herself on her judgment was being conducted through a famous art gallery. As the group finished the tour, she turned to the guide and said, "I must say I am greatly disappointed. I expected something wonderful, but there is nothing outstanding among these paintings. They are all quite ordinary."

The guide straightened his shoulders. Turning to the others, he stated haughtily: "Everything you have seen here has already passed the test of time and the approval of our finest critics. The paintings are no longer on trial. It is the visitor whose judgment is being tested."

*t & s*

From a *New York Time* Book Ad.

"The life of a psychiatrist
is not always a happy one.
The typical patient
enters your office
dubious of his own sanity
and departs some time later
dubious of yours."

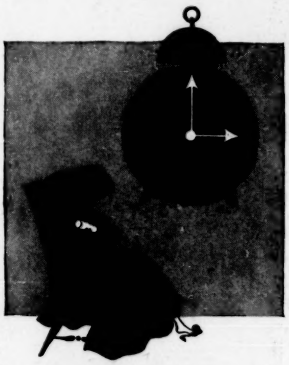
*t & s*

Two men were flying East in a passenger plane, making the first air trip of their lives. The plane touched down at St. Louis and a little red truck sped out to its side to refuel it. The plane landed again at Cleveland and again a little red truck dashed up to it. The third stop was Albany and the same thing happened. The first of the two men looked at his watch and turned to his companion. "This plane," he said, "makes wonderful time."

"Yes," said the other, "and that little red truck ain't doin' so bad either."

*(Continued on page 40)*

Simplicity around the clock



SIMILAC

so simple to prescribe
so simple to prepare
so simple to digest

*that*

there is no closer equivalent to human breast milk

*helps assure uncomplicated feeding*

for full term and premature infants throughout the first year of life

SIMILAC DIVISION
M & R Laboratories • Columbus 16, Ohio

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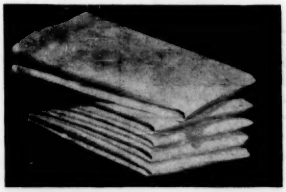
# *"Just a minute, Doctor"...*

WHAT YOUR NURSE wants to suggest to you is the use of a linen supply service. The linen supply dealer in your neighborhood has towels and sheets available for professional use. Through him you can be assured of dependable deliveries and completely flexible service to fit your requirements. Laundering, checking and replacement are no longer a problem in your office.

You'll be sure of getting top quality, too, for almost all linen supply firms use Fairfax Towels, made by the makers of famous Martex Bath Towels—the kind you're likely to have in your own home.

Why not let your nurse check with a linen supply dealer—today?

***And Doctor...*** In case you are already using a linen supply service, you will find it beneficial to have them re-examine your towel requirements from time to time. You might need to change the type or size of towel you're using now—or perhaps increase the quantity of your regular delivery. Remember, you'll find your supplier's name listed in the classified section of the phone book under "Linen Supply" or "Servilinen."

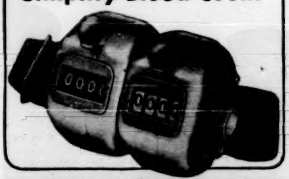


**Fairfax·Towels**

*FAIRFAX TOWELS*—HUCK, CRASH AND TERRY TYPES · *FAIRFAX* SHEETS AND PILLOW CASES

PRODUCTS OF WEST POINT MANUFACTURING CO. • WELLINGTON SEARS CO., SELLING AGENTS, 65 WORTH ST., NEW YORK 13

**VEEDER-ROOT**
**Hand Tallies**
**Simplify Blood Count**



Complete attention can be focused on the microscope when a Veeder-Root single or double counter records differential and red and white count. Nestled comfortably in either hand, other hand is free for adjusting microscope, pencil work or handling slides.

***QUICK FACTS*** — *Single counter* counts to 10,000, white figures, black background. *Double counter* — each unit counts to 10,000. Figures on one unit white on black, other unit red on black.

If not available from your Medical Supply House, use coupon below.

**VEEDER-ROOT**

*"The Name that Counts"*

VEEDER-ROOT INC.
16 SARGEANT ST., HARTFORD 2, CONN.
Please send name of nearest distributor.
Please send information and literature.

Company_____

Street_____ City_____ State_____

Name_____


*(Tonics and Sedatives Continued)*

A professor at medical school asked a student how much of a certain drug should be administered to a patient and the young man replied, "Five grains."

A minute later he raised his hand. "Professor," he said, "I would like to change my answer to that question."

The professor looked at his watch and replied, "Never mind, young man, your patient has been dead for 40 seconds."

*t & s*

From the *New York Times*, May 13, 1951.

## NOT IN DOCTOR'S 'HAND'

### NARCOTICS PRESCRIPTION TOO EASY TO READ SO FORGER IS TRAPPED

Fort Madison, Iowa—Legibility can be a liability. Although it comes under the heading of biting the handwriting that feeds her, Miss Jerlyn Madison, penmanship consultant of the Sheaffer Pen Company, passes along the story of a New Yorker whose writing was too easy to read.

The man gave a prescription for narcotics tablets to a druggist, who took one look at it and called the police. The reason? The druggist said the prescription was too legibly written, so he knew it must be a forgery. No doctor, he said, ever wrote that plainly.

—E. W. Tillotson

*t & s*

An Aberdonian asked a shopkeeper in Glasgow for a pennyworth of cheese.

"We don't sell pennyworths," said the shopkeeper.

"Well, show me two pennyworths," said the Scot. This was produced, whereupon the customer whipped out his pocketknife, cut it in two, put down his penny and, picking up his half of the cheese, said: "Trouble with you is—you're lazy!"

*t & s*

### SOLILOQUY IN WHITE

I work for a Doctor up in an office
And sometimes I sit all alone
Hoping people won't get sick
So I won't hear that phone.

II

One never knows who will be ailing—
Maybe Mrs. Jones' heart is failing—
What can I do—I'm not a Doc—
Take aspirin or be treated for shock?

III

A Doc can't make appointments on time—
Doesn't get home to supper 'til nine.
You know where an office nurse fits in?
Telling little white lies—is it a sin?

Rosa Donegan

*t & s*

Headline from *The Daily Times*, Mamaroneck, N. Y.:

WHITE PLAINS GIRL, NOW A VIRGIN ISLANDER, FLIES HOME—RELUCTANTLY —AS AN AUTHOR

Now let's see: The reluctance is due to . . . . . .

*t & s*

The man who thought he was a big gun in industry—been fired nine times.

*(Continued from page 36)*


WANTED—YOUNG PHYSICIAN; DRAFT EXEMPT; to join well established 4 man group; in new medical clinic; excellent hospital; northern Michigan; remuneration open. Box 1403 C, % AMA.

RESIDENT PHYSICIAN—FOR GENERAL ROTATING service; contract for 1 year; $200 per month plus full maintenance; 225 general hospital. Administrator, St. Joseph Hospital, Lorain, Ohio. C

**PEDIATRICIAN—CERTIFIED OR NEEDING EXperience under certified pediatricians for certification; to assist in office and hospital, take charge of well baby clinic and if satisfactory take over practice by 1953; new pediatric department under construction; must have Maryland license or reciprocity with Maryland; excellent opportunity. Box 1412 C, % AMA.**

WANTED—DOCTORS FOR JULY AND AUGUST FOR children's camps in Honesdale, Pennsylvania. Apply: Camps Rosemont-Rose Lake, 1721 Stephen Street, Brooklyn 27, New York. C

WANTED—CLINICAL DIRECTOR; WITH THREE OR 4 years experience in psychiatry; salary $7560 per year; building new 120 bed addition; good opportunity for advancement. Contact: Dr. Eugene E. Elder, Superintendent, Youngstown Receiving Hospital, Youngstown, Ohio. C

## The Medical Bureau

PALMOLIVE BUILDING CHICAGO

**ANESTHESIOLOGY: (A63) To assume responsibility anesthesia for surg. group; univ. med. center. (A64) Ass'n., anes. group; priv. pract. privileges; univ. town, East.**

**ASSISTANTSHIPS: (B39) By FACS: univ. town, 150,000; So. (B40) Gen'l. pract; resid. area near District Columbia; early partnership. (B41) Gen'l. pract; resort area; North Carolina; $600-$800 plus %. (B42) Small group; gen'l. pract. with 75% gen'l. surg; Pac. NW. (B43) By cert. surg. and gen'l. pract; oppor. own pract; Chicago.**

**DERMATOLOGY: (C73) Dipl. direct dept., 25 man group; N.W.; min., $15,000.**

**EENT: (D20) Oto. to head dept., 26 man group; should average $25,000 after first yr; town 75,000 near univ. center, West. (D21) Oph. qual. eye surgery; head dept., 20 man group; univ. city, 200,000; So. (D22) Oph. and Oto. to head depts., 8 man clinic increasing to 14; univ. town, 100,000; essential.**

**FOREIGN APPOINTMENTS: (E42) Orthopedist and internists, Dipls. or elig. ($20,000) and G.P. ($16-$18,000); 2 yr. contract; 14 months overseas.**

**GENERAL PRACTICE: (F23) Two GP's, one qual. surgery; 17 man group; univ. town, 125,000; So.; min., $9600. (F24) Ass'n; gen'l. pract; estab. 30 yrs; considerable surg; college town, Indiana. (F25) Ass'n., well estab. group; community 50,000; teaching program; Calif. (F26) Ass'n., small group; town, 35,000; Pennsylvania. (F27) GP qual. surg; pract. estab. 17 yrs; full partnership; Texas.**

**INDUSTRIAL MEDICINE: (G38) Med. Dir; 3000 employes; modern med. dept; opport. research; univ. city, NW. (G39) Ass'n; practice two-thirds industrial, one-third private; univ. town, NY State. (G40) Ass't. Med. Dir; training, int. med. prof; around $10,000; small town near winter resort; So.**

**INTERNAL MEDICINE: (H83) Dipl. for chief of med. services; group and hosp; univ. city, NW; very min., $12,000. (H84) Gastroenterologist; ass'n, with internist, Dipl; town of 45,000; So. (H85) Ass'n. with internist, Dipl; large pract; resid. town, NY State. (H86) Well estab. group; new clinic bldg; salary to begin; full partnership after short period; univ. city, Tex. (H87) To serve as house physician, resort hotel; excel. opport; for priv. pract; West.**

**OBSTETRICS-GYNECOLOGY: (J66) Ass'n, with OB-GYN., Dipl; college town, near several large cities; full partnership after first year. (J67) Head newly created dept; 20 man clinic; univ., NW.**

**ORTHOPEDICS: (K79) Head dept., 12 man group; college town, 150,000; So.**

**PATHOLOGY: (L88) Dir. dept., 250 bed hosp; %, exceeding $20,000; resort city, So. (L89) Gen'l. hosp. 250 beds; bldg. program will double; % or salary; college town, Pennsylvania. (L90) Head depts., 2 hosps. and assoc. with 3 Amer. Bd. men; winter resort town, So.**

**PEDIATRICS: (M69) Ass'n., 22 man group; univ. town, 60,000, NW; about $10 000. (M70) Ass'n. with cert. pediatrician; univ. town, 50,000; partnership; Pac. NW. (M71) Ass'n., pediatric dept., fairly large group; full partnership; teaching, research opports; California. (M72) Head dept., well estab. clinic; univ. city, So.**

**PSYCHIATRY: (N67) Director, city hygiene clinic and dept., teaching hosp; $12-$15,000; NW. (N68) Psy. or NP; full time staff appointment; large, teaching hosp. (N69) Ass'n., 20 man clinic; city, 200,000; SW.**

**RADIOLOGY: (P79) Assoc. radiologist; one of country's leading, teaching hosps; advantageous if part. int. therapy. (P80) Assoc. radiologist; 400 bed hosp; college town, 50,000; East; 1st yr.—$12,000, 2nd—$25,000, 3rd—%. (P81) Ass'n., group limiting pract. to X-ray; salary or %, min., $15,000; large city, univ. center.**

**SURGERY: (R57) Gen'l. surg., qual. orthopedics; long estab. group; town, 50,000; NW.**

**TUBERCULOSIS: (S49) Med. Dir., small san; residential town near univ. center; New England; $10,000, mtce.**

**UROLOGY: (T33) Head dept; well-estab. group; univ. city; So.**

**(If none of the openings described above meet your requirements, please send for an ANALYSIS FORM so we may prepare an individual survey for you.)**

Burning Larson
DIRECTOR


*(Continued on page 42)*

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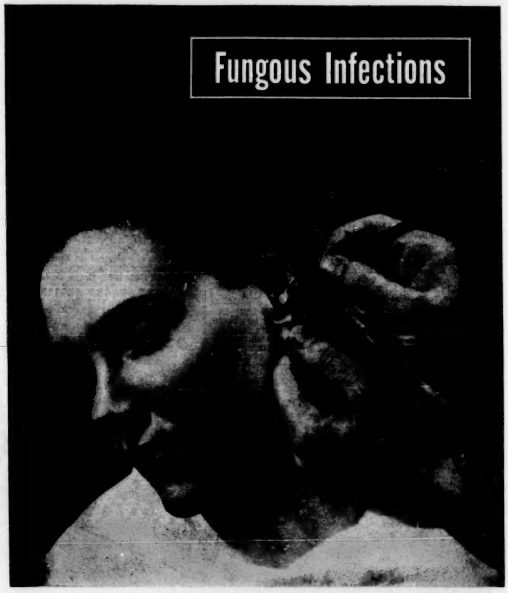


*For office treatment of otomycosis and furunculosis of the outer ear,* CRESATIN (*Liquid*) *is applied directly to the affected area on a pledget of cotton or a cotton wick.*

# CLINGING, PENETRATING FUNGICIDE combats mycotic infections

*For home use in the treatment of "athlete's foot" prescribe* CRESATIN *Ointment—convenient preparation of* CRESATIN (*with benzoic acid and ethylcellulose*) *in clear ointment form.*

CRESATIN® *Metacresylacetate (Sulzberger) Bottles of 1 fluidounce.*

CRESATIN® OINTMENT ¼-*oz. collapsible tubes.*

CRESATIN® Metacresylacetate (Sulzberger) is an antiseptic-analgesic liquid with high fungicidal activity, plus remarkable clinging and penetrating properties which promote intimate contact with the skin—even in small crevices that are not easily accessible to many of the ordinary medicaments that are applied topically.

CRESATIN is indicated in the treatment of ear infections such as mycosis and furunculosis of the outer auditory canal, and purulent otitis media. CRESATIN and CRESATIN OINTMENT are also effective in the treatment of common mycotic skin infections such as *tinea circinata, tinea versicolor, tinea cruris* ("Dhobie itch"), and epidermophytosis of the feet ("athlete's foot").

***Sharp & Dohme, Philadelphia 1, Pa.***

# CRESATIN®

(Continued from page 40)

SITUATION OPEN—IN SMALL CLINIC IN NORTH-eastern Wisconsin; for graduate MD to fill vacancy caused by a member entering military service. Box 1404 C, % AMA.

**GENERAL PRACTICE ASSOCIATE — IN WELL established office near Baltimore; net income over $10,000 1st year without any obstetrics. Box 1398 C, % AMA.**

WANTED—SURGICAL ASSISTANT; BY BOARD CERtified general thoracic surgeon; salary open; would prefer recent graduate willing to learn. Box 1415 C, % AMA.

MEDICAL DIRECTOR — 100 BED TUBERCULOSIS hospital; southern state; North American graduate; $7000 per year and complete maintenance. Box 1422 C, % AMA.

ROENTGENOLOGY — TWO YEAR AMA APPROVED residency; applying for 3 year approval; 21,000 X-ray examinations per year; 200 KV therapy; also superficial; 150 mgms. radium; training in radiation physics included; 100 bed hospital; associated with group clinic in Mid-West; has approved 3 year residency in surgery and medicine allowing for well rounded training; group has 13 full time and 2 part time physicians and 2 dentists; an immediate reply will be sent to your letter; opening for July, 1951; stipend $150 per month; opportunity for participation in research program. Box 1105 C, % AMA.

PHYSICIAN WANTED—RECENT GRADUATE; INterested in medicine and surgery; to head service in mental hospital +; modern equipment, active service; salary $6360 less maintenance. Apply: Superintendent, Taunton State Hospital, Taunton, Massachusetts. C

WANTED—HOUSE PHYSICIAN; BY 95 BED APproved hospital; salary $300 plus maintenance; must have graduated from approved medical school and have had an approved internship; travel expenses refunded at the end of year of service. G. N. Wilcox Memorial Hospital, Lihue, Kauai, Territory of Hawaii. C

**PHYSICIAN NEEDED — FOR GENERAL PRACtice; inland county seat 1000 population; drawing trade from wide rural area; county physician position open; fully equipped hospital; no practicing physician in county; nearest other hospital 120 miles; living quarters and office available now; must be class A graduate; state age, qualifications, etc. Josephine Dodd, Secretary, Carter County Chamber of Commerce, Ekalaka, Montana. C**

WANTED—INDUSTRIAL PHYSICIAN; ATOMIC ENergy project; city of 25,000 people; in state of Washington; provision for attractive home at reasonable rental; position offers experience and opportunity in new aspect of industrial medicine. Box 1382 C, % AMA.

**WANTED—BOARD CERTIFIED OR BOARD ELIgible ophthalmologist; or EENT; for clinic in mid-west town of 100,000. Box 1360 C, % AMA.**

PHYSICIAN WANTED—EXCELLENT OPPORTUNITY for competent resident in general practice; or young physician who desires an opening in Arizona; established lucrative practice, modern office, plan to retire; no cash required. Box 1381 C, % AMA.

**WANTED—BOARD CERTIFIED OR BOARD ELIgible orthopedist; for a new clinic group; in a mid-west town of 100,000. Box 1358 C, % AMA.**

ANESTHESIOLOGIST — TO JOIN ESTABLISHED group; with hospital+ connections; private fees; vacation time; permanent association. Box 1162 C, % AMA.

**MEN AND WOMEN PHYSICIANS—FOR 2600 BED institution with university affiliation; extensive teaching, research programs; starting salaries $5280 and $6300, depending upon experience; complete maintenance at nominal cost; citizenship required. Cleveland State Hospital, Cleveland 5, Ohio. C**

SURGICAL ASSISTANT WANTED — BY 16 MAN clinic in Mid-West; surgical department consists of 4 American Board men, 3 of whom are FACS; approved for preceptor training for American Boards; salary $5000. Box 1385 C, % AMA.

**WANTED—ASSOCIATE: JULY 1ST OR LATER; good salary; general practice; surgery; obstetrics; Pennsylvania; 5000 population; hospital facilities; give reference, training, etc. Box 1388 C, % AMA.**

PHYSICIAN WANTED — IN TOWN OF 500; NO competition; rural territory; 20 mile radius; modern dwelling; office rooms; city water; sewer; electricity; ideal setup for right party. Wetzel Real Estate, Gilman, Wisconsin. C

IS THERE A YOUNG PHYSICIAN, ELIGIBLE FOR Maryland Board, keen enough to acquire a large general practice in Baltimore at practically his own reasonable terms by writing full qualifications at once? Box 1384 C, % AMA.

**WANTED—PHYSICIAN; IN OHIO STATE HOSpital +; excellent opportunity for experience in medicine, surgery and neuropsychiatry; good salary; full maintenance; send full description of self with recent snap-shot. Box 1332 C, % AMA.**

ASSOCIATE IN GENERAL PRACTICE—TEXAS; ACtive young physician desires associate; pro rate percentage of net income from start with guaranteed minimum of $750 a month. Box 1390 C, % AMA.

WANTED—PHYSICIANS; 1500 BED STATE MENTAL hospital; salary open; full maintenance in addition to salary. W. B. Brown, MD, Acting Superintendent, Mt. Pleasant State Hospital, Mt. Pleasant, Iowa. C

PHYSICIAN — SOON AS POSSIBLE; GRADE A-1 medical school; good educational background; full time; opportunity for investigation work with patients on diagnostic basis; short and long term ills; internal medicine only; 50 bed hospital; Pennsylvania. Box 1329 C, % AMA.

WANTED—THE RIGHT INTERNIST; WE NEED AN energetic American born man; with board training and group IV deferment; under 45 years of age; who wishes to work with an ethical, congenial staff and in a 1st class community hospital; he must be willing to live on the north side of Chicago and make some home calls during his 1st 2 years; thereafter, he should be able to live in an excellent suburb and let younger men make most of his home calls; he should, but need not teach and write; he will be guaranteed $10,000 net, his 1st year and $15,000 the 2nd; full partnership thereafter; state age, religion, training and experience in 1st letter. Box 1302 C, % AMA.

WANTED—RESIDENT PHYSICIANS; 420 BED NEW York City Hospitals Department Tuberculosis Sanatorium +; opportunity learn tuberculosis chest diseases; tuberculosis experience desirable but unnecessary; sanatorium affiliated with medical school; salary and family maintenance. Write Municipal Sanatorium, Oltsville, New York. C


**When the patient says:**

**"oh, Doctor, my feet!"**

...avail yourself of the new *professional* method of treatment for common foot disorders... based on the *Morton Principle*[1] ...developed through 25 years of research at two of our largest Eastern universities.

Treatment based on the *Morton Principle*, described in recent textbooks and reports [2], makes positive diagnosis by x-ray possible and is especially adapted for use in general medical practice. Compensating Insoles (Morton Principle) are mechanical aids used in conjunction with general treatment.

Full information and bibliography is available to practicing physicians. Write (or send coupon below) to Professional Research Products, Farmington, Mo., sole authorized manufacturers and distributors of...

**COMPENSATING INSOLES**

(MORTON PRINCIPLE) ★

1. *"The Human Foot"* Columbia University Press, 1935, Dudley J. Morton, M.D.
2. Further bibliography will be sent with information on *Morton Principle*.

**Physicians: Mail coupon for full information.**

PROFESSIONAL RESEARCH PRODUCTS
Farmington, Missouri.

**Please send information on the *Morton Principle* and Compensating Insoles.**

Name_____

Address_____

City_____



V 146
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**SHAY MEDICAL AGENCY**

**55 E. Washington Street**

**Chicago 2, Illinois**

**ANESTHESIOLOGIST:** Have you completed at least 2 yrs. approved train.? New Eng. grp. needs you; guaranteed min. $9000 yr.

**AVAILABLE PRACTICE:** Phys.-Surg. has been called into service; has 13 bed hosp. equipped to handle med. and surg. patients but no obstetrics; either rental basis or % could be worked out; permanent; can clear $2,000 mthly.

**DISPENSARY WORK:** for short term genl. 350 bed hosp.; east north central state; $500 to start.

**EENT:** Living in this Minn. town 14,000 is gracious and interesting; modern clinic bldg; 7 doctors.

**GENERAL:** for country pract. w/excel. grp.; SW; $700-$1000 depend. on exp.; have own well-equipped hosp appr. by AHA and SHA.

**HOTEL PHYSICIAN:** Beaut. establishment, well-known in mountain state; permanent; $3600 a yr., rm. and bd. and auto.; priv. pract. too.

**INDUSTRIAL:** to be in chge. of med. dept. at new plant dealing w/radioactive materials; about 1,000 personnel; $7-$8000 depend. on exper.; Mt. state.

**INSURANCE:** full time appointment; home office well known Eastern Co., bkgrnd in int. med. helpful; 5 day week; $7500 to start.

**INTERNIST:** Doctors who have visited this grp. report favorably; $1000 mo. to start; later ptnership; Kentucky.

**LOCUM TENENS:** to help phys-surg. in lovely city between Chgo. and Milwaukee; $25 a day.

**MEDICAL DIRECTOR:** to be in chge of indus. med. and head dept; No. Central Ordnance Co.; $8500.

**OBSTETRICIAN-GYNECOLOGIST:** (a) Work with certified man; in suburb of San Francisco; salary 1st yr; then percentage. (b) Would you like to work with progressive grp in the Nation's Capital? You would be chief of dept; $12,000 yr. to start. (c) Rapidly expanding Mich. grp; wants yg. man.

**OPHTHALMOLOGIST and OTOLARYNGOLOGIST:** Two men needed for grp; Pacific NW; Ptnership.

**PATHOLOGIST:** Associate to certified man California; priv. lab., hosp. work and Coroner's office work. Remuneration open.

**PEDIATRICIAN:** Early availability, good train. necessary to join grp; So. California; 2 yr. contract then full ptnership.

**REST RESORT PHYSICIAN:** ideal opening for physician desiring to live semi-retired life; w.only 2 or 3 hrs. daily devoted to profession; spacious living quarters; full mtn; office and nominal salary; priv. practice allowed; majority of guests are convalescents; East South Central.

**STUDENT HEALTH:** Full time physician for health work; M-W; $7150 to start with addn. money for spec. wk; connected with med. school.

**ASSISTANT SURGEON:** 5 man grp. increasing staff in this field; need someone just starting out who can assist exper. man and work independently when need arises; $7200 w/future ptnrshp; north central state.

**TRAUMATIC SURGERY:** to assoc. w/2 man clinic; priv. and indus. cases; no factory work; $700 mthly; north central state.


(Continued on page 44)

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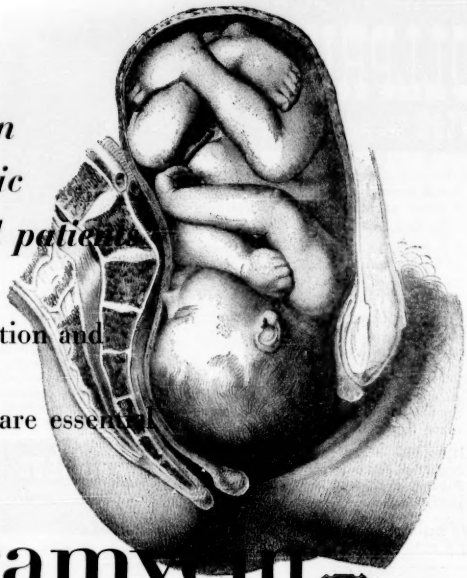
*in the selection*
*of an antibiotic*
*for obstetrical patients*



rapid absorption and
broad tissue
distribution are essential

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Rapid absorption and broad distribution following oral administration suggest the use of Terramycin as an effective aid in combating puerperal infection. Therapeutic serum and tissue levels are quickly achieved to control infectious processes which may complicate pregnancy or labor. In pyelitis of pregnancy, for example, patients respond "very promptly" to Terramycin with "a prompt drop in temperature, disappearance of pyuria and bacilluria and symptomatic relief."*

*Douglas, R. G.; Bell, T. L. and Davis, I. F.: California Med. 73:463 (Dec.) 1950.

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1941 A DECADE OF PROGRESS IN ANTIBIOTIC THERAPY 1951

(Continued from page 42)

MIDWESTERN GROUP OF 22 DOCTORS COVERING all specialties is in need of physician for industrial medicine and surgery; established 27 years; salary open. Box 1331 C, % AMA.

**ASSISTANT PHYSICIANS—MAN AND WOMAN:** by July 1st: $5000-$7000 and maintenance; suburban Philadelphia; state age, training, experience, religious preference and family status. Box 1336 C, % AMA.

PHYSICIAN WANTED—DRAFT CREATED VACANCY for MD in modern fully equipped clinic in small northern Minnesota town. Write: Joe Dufault, Secretary, Oklee Community Hospital Association, Oklee, Minnesota. C

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**ANESTHESIOLOGY: (B60) Bd. elig; to head dept 200 bed hosp; one finishing residency acceptable; excel twn 15,000; to $12,000; SE. (B61) Dipl; to head dept small hosp; 4 top surgeons do full time major surg; minimum $14,000; Chgo area. (B62) Head dept; 600 bed hosp; med. sch. affiliated; E. (B63) Chief; teach'g hosp; also faculty appt. affil. Med. Sch. S. (B64) Defense Project; far north; 2 years; $20,000; drft. deferment.**

**ASSISTANTSHIPS: (C60) GP; priv. gen'l. pract; $750; prtnship 6 months; excel Calif twn serving lge area. (C61) GP; By surg'n; duties GP and surg; may develop own OB pract; excel twn nr. Battle Creek, Mich. (C62) GP; By internist and surg'n; priv. pract; assist at surg; $7500; univ prtnership city 500,000; Minn. (C63) Internist; by cert. int; cardiovascular diseases; twn. 10,000; Mich. (C64) Internist; excel further trn'g w cert. internist and surg; group; city 80,000; Missouri.**

**DERMATOLOGY (E26) Hghly qual to assoc w cert man; active priv. pract; college twn 60,000; S.**

**GENERAL PRACTICE: (I-82) GP for Gov't project; draft deferment; 2 yr. contract; $10,000. (I-83) GP; Ass'n; active priv. pract; Guar. and % should equal $15,000 short time; central. (I-84) GP; some OB and surg; active grp; will reach $15,000 1st year; Mich. (I-85) GP; Ass'n; active priv. indus. grp. pract; $14,000; SE. (I-86) Ass'n; very active mine priv. pract; $12,000; S SE. (I-87) Indus. Chy; permanent, outstanding lge western resort hotel; good sal, full maint; and car; also priv fees from guests; will replace phy retiring after 25 yrs; excel potential.**

**INTERNAL MEDICINE: (K51) Top secret Gov't project; 2 yr. contract; draft deferment; long vacations; $20,000; hghly recomm. far North. (K52) Hghly qual in allergy; consultation work under cert internist and allergist; eminent 50 man, almost all certified grp; serves as med center of lge area; S. (K53) Dipl; to specialize in cardiology; Ass'n; excel 35 man grp; expand'g to 50 man; 250 bed hosp; College twn 35,000; SW. (K54) Ass'n; hghly qual internist; active priv. pract; substan. guar and % sh'd reach $15,000 short time; city 100,000; Ohio.**

**OB-GYN: (N45) Dipl; to bd. dept lge grp; $12,000; D. C. area. (N46) Ass'n; estab. 33 man grp; about $12,000; town 115,000; Midw. (N47) Ass'n 4 man grp; excel twn 40 miles from New York City. (N48) Ass'n; excel grp; prtnship basis; $12,000; Illinois. (N49) Head dept; W. Virginia grp; $12,000. (N50) Hd. dept; Grp; $12,000; Minnesota.**

**ORTHOPEDICS: (Q42) Ortho Surg; for "top secret" Gov't project; 2 yr. contract; long vacations; far North; $20,000; draft deferment. (Q-43) To head ortho service; lge TBC hosp; 50 patients; about $9000; possibility faculty appt univ medical sch; W. (Q44) Ass'n; cert. ortho surg'n; prac; duties fractures, adult ortho and scipp. children wk; excel college twn; 500; sht time then graduated %; Midw. (Q45) Dipl or elig; ass'n; well estab grp; closed prtnship basis; substan. financial arrange; twn. 50,000; Ind. (Q-46) Dipl; Ass'n; 23 man grp; $15,000; will increase substantially; NW.**

**PATHOLOGY: (P58) Bd. elig. to assoc. w cert. Path; Heads depts 5 hosps; also priv. clinical lab; over 6000 surgical specimens and 125 autopsies last yr; $12,000 start rapid increases; city 400,000; Calif. (P59) Head dept lge hosp; $20,000; S. S. (P60) Head dept; excel gen'l hosp; will reach $20,000; twn 50,000; Ind. (P61) Dipl or elig; head dept excel hosp; will reach $20,000 upon completion of 50 bed wing; Pa. (P62) Dipl; Head dept 400 bed hosp; college twn 60,000; $15-$18,000; E.**

**PEDIATRICS: (Q44) Ass'n; well estab 10 man grp mostly Mayo trn'd; $10,000; twn 25,000; w.min. (Q45) Ass'n or location for priv pract; no Ped in area 50,000; excel univ twn; $12,000; should have heavy referral pract; W. (Q46) Head dept; 5 man grp; excel twn 45,000; NY. (Q47) Ass'n; active priv pract; % basis should equal $15,000; Texas. (Q48) Ass'n; 23 man grp; to $12,000; univ twn 50,000; Midw. (Q49) Ass'n; cert. Ped; active pract; city 300,000; S. (Q50) Dipl; head dept; old estab grp; twn 35,000; SE. (Q51) Head dept; old estab grp; $12,000; twn 30,000; Wisconsin.**

**PSYCHIATRY: (R24) Analyst Dir; dipl; eminent san; med. sch. affiliation; child guidence cl; oppty. faculty appt; about $14,000; central. (R25) Dipl; clinical dir; lge hosp; outside USA; $12,000; furn house; hghly recomm.**

**RADIOLOGY: (T42) Dipl; Ass'n; 40 man grp; medical center; should be qual head dept; W. (T50) Dipl; for faculty appt medical school; 500 bed hosp; E.**

**SURGERY: (W35) Ass'n; estab. eminent grp; must be qual bone and joint surg; Chgo area. (W36) Ass'n; small well estab. grp; excel facilities; Alaska. (W37) Dipl; Chief; excel hosp; extremely active surg'l service; Pennsylvania.**

**UROLOGY: (Y18) Ass'n; head dept; eminent 8 man, mostly cert. group; teaching hosp. facilities; city 600,000; S. (Y19) Dipl. or elig; ass'n; cert. urologist; active priv. pract; sal 6 months, then prtnership; college town 40,000; W. (Y20) Bd. elig; location; local MD's will coop; should net $12,000 1st yr; college twn 40,000 near lge army post; SW. (Y21) Ass'; estab. 10 man grp; should be qual to head dept; town 65,000; Pa. (Y22) Cert. or elig; duties diag. and surg; 6 man grp w/100 bed hosp; priv. pract. basis; twn 70,000; 6000 students; SW.**

If none of these openings meet your requirements let us prepare an individual survey for you. Please send for our ANALYSIS APPLICATION FORM. *Strictly Confidential.*


(Continued on page 46)


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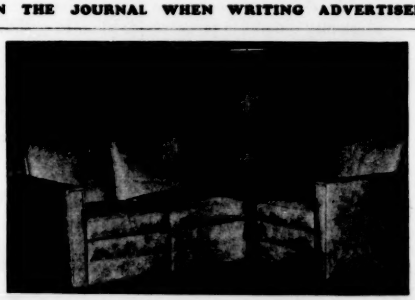

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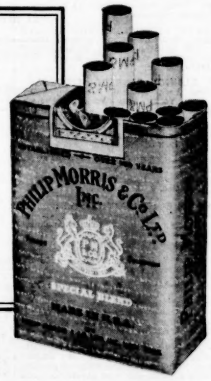


*Then, Doctor, BELIEVE IN YOURSELF!*

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*(Continued from page 44)*

PHYSICIANS WANTED — DETROIT MUNICIPAL sanatorium; board credit; $1800-$6300 depending on experience; civil service protection; citizenship, eligible Michigan registration required; complete maintenance at nominal cost. Maybury Sanatorium, Northville, Michigan. C

**WANTED—PHYSICIAN FOR GENERAL PRACTICE; in 58 bed hospital; located in mining area; good salary and complete maintenance for single man; must be eligible for license in West Virginia and available immediately; full details 1st letter and inclose photo. Mercy Hospital, Inc, Logan, West Virginia. C**

MIDWESTERN GROUP OF 22 DOCTORS COVERING all specialties is in need of surgical assistant; established 27 years; board credit; salary open. Box 1330 C, % AMA.

WANTED—ASSISTANT PHYSICIANS; SALARY $5040-$6600; large eastern state mental hospital +; approved; excellent teaching program; training for boards. Box 1338 C, % AMA.

**WANTED—BOARD CERTIFIED OR BOARD ELIGIBLE internist; interested in allergy for clinic group; in a Kansas town of 100,000. Box 1359 C, % AMA.**

GENERAL PRACTITIONER — TO JOIN NEWLY formed Capitol Clinic group; may have complete or partial private practice; new building, ideal location; 1971 West Capitol Drive, Milwaukee, Wisconsin. Contact: Dr. M. Margiolos, 1346 North 12th Street, Milwaukee, Wisconsin. C

**WANTED — RESIDENT PHYSICIANS; $500 PER month and maintenance; fully approved general hospital *+; 350 beds; 1 year from July 1st; rotating all major services; teaching program; physicians priority 1A doctor draft should not apply; requirements 1 year internship approved hospital; graduate AMA approved school; full information 1st letter; approved rotating internship also available. Administrator, Ohio Valley General Hospital, Wheeling, West Virginia. C**

WANTED — YOUNG SOUTHERNER; MAN; DRAFT exempt; with 2 or 3 years training in internal medicine; to work in 35 bed general hospital which is owned by FACS; good salary now and partnership to right person later. Write: Box L, Murphy, North Carolina. C

**WANTED—PHYSICIANS FOR GENERAL HOSpitals; general residency; with opportunity to rotate through various services; salary $325 per month. Write: J. N. Bankston, State Hospital Board, State Capitol, Baton Rouge, Louisiana. C**

ANESTHESIOLOGIST—TO JOIN GROUP OF PHYSIcians; organized on group practice basis; serve as head of department of anesthesiology in 250 bed hospital; excellent future. Great Lakes city. Box 1298 C, % AMA.

**OBSTETRICIAN-GYNECOLOGIST—GROUP CLINic; Florida license; salary open. New York Medical Exchange, 489 Fifth Avenue, New York, New York. Patricia Edgerly, Director. C**

WANTED — RESIDENT PHYSICIAN; FOR ISLAND town of 400 people; cooperate among grouped island population of 2200 with established MD; subsidy $3500; space and equipment provided. Write: P. L. Brown, First Selectman, North Haven, Maine. C

**EENT — GROUP CLINIC; FLORIDA LICENSE; salary open. New York Medical Exchange, 489 Fifth Avenue, New York, New York. Patricia Edgerly, Director. C**

WANTED—PHYSICIAN FOR MINE PRACTICE; INcome $12,000 per year; give details of qualifications in 1st communication. Box 1248 C, % AMA.

**OPHTHALMOLOGIST—UNDER 40; GROUP CLINic; Texas, $12,000-$20,000. New York Medical Exchange, 489 Fifth Avenue, New York, New York. Patricia Edgerly, Director. C**

JEWISH HOSPITAL OF HOPE REQUIRES THE SERvices of a full time medical superintendent and resident physician; attractive salary; suitable accommodation provided on the hospital grounds and good prospects; all applications will be treated confidentially; applications must be in writing and addressed to: Mr. J. R. Bogante, KC, President of the Jewish Hospital of Hope, 4465 St. Lawrence Boulevard, Montreal, Quebec. C

**ANALYST-DIRECTOR—THERAPY PROGRAM; 75 bed private psychiatric hospital; 11 diplomates; 7 residents; Middle West; university medical school affiliation and faculty rank; salary and perquisites will exceed net income from private practice gross of $30,000. Box 1242 C, % AMA.**

WANTED—TUBERCULOSIS PHYSICIAN; FOR DIversified tuberculosis work; in unit of general hospital * +; including clinic, wards and surgery; starting salary $524; must have at least one year experience; and a California license or able to obtain one; must be available July 1st. Box 1154 C, % AMA.

**INDUSTRIAL PHYSICIAN — CONSTRUCTION job; Georgia; salary open. New York Medical Exchange, 489 Fifth Avenue, New York, New York. Patricia Edgerly, Director. C**

OPHTHALMOLOGIST WANTED — BY CALIFORNIA group; well-established; partnership opportunity. Box 1200 C, % AMA.

**ASSOCIATE PHYSICIAN — TRAUMATIC SURgery; Michigan, $8400. New York Medical Exchange, 489 Fifth Avenue, New York, New York. Patricia Edgerly, Director. C**

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**CONSTRUCTION PROJECT — NORTH AFRICA; 1 year contract, possibly 2 or 3; $12,000; plus transportation and quarters. New York Medical Exchange, 489 Fifth Avenue, New York, New York. Patricia Edgerly, Director. C**

WANTED—YOUNG PHYSICIANS; FOR INDUSTRY, hospitals, radiology, pathology, student health, etc. Brown's Medical Bureau, 7 East 42nd Street, New York, New York. C

**CALIFORNIA AND WESTERN STATES COMpletely covered; openings in general practice and in specialties; clinics, associations and opportunities for independent practice. Write: Pacific Coast Medical Bureau, Agency, 1406-1412 Central Tower, 703 Market Street, San Francisco 3, California. C**

## INTERNS AND RESIDENTS WANTED

*The ★ signifies a hospital approved for internships and the + approved for residencies in specialties by the Council on Medical Education and Hospitals of the A. M. A. Consult Council's approved list for types of internships and residencies approved.*

APPROVED ONE OR TWO YEAR RESIDENCY IN pathology—available for July 1, 1951; for graduates of class A medical school who have completed an approved rotating internship of at least 12 months; very active service; mid-town Manhattan; 440 bed general hospital.*+ Apply: Graduate Training Committee, John L. Madden, MD, Chairman, St. Clare's Hospital, 415 West 51 Street, New York 19, New York. D

AVAILABLE JULY 1, 1951—FULLY APPROVED ONE year rotating internships; $200; fully approved 1 year surgical residencies; $225; fully approved 2 year medical residency; beginning stipend $225; 200 bed general hospital *+; hospital insurance coverage; quarters for self; uniform laundry. Apply: Director, Pontiac General Hospital, Pontiac, Michigan. D

**RESIDENCY IN GENERAL SURGERY—FOR JUNior resident; beginning July 1, 1951; 3 year training program approved by the American Medical Association, the American College of Surgeons and the American Board of Surgery; 320 bed general hospital.*+ Apply: Superintendent, The Toledo Hospital, Toledo 6, Ohio. D**

RESIDENT—RADIOLOGY; AVAILABLE JANUARY, 1952; Hospital for Joint Diseases.*+ New York; general hospital featuring orthopaedic surgery; approved 3 year training, diagnostic and therapeutic roentgenology; about 50% department activities is orthopaedic radiography; deep and supervoltage therapy. Apply: Executive Vice President. D

MEDICAL RESIDENCY—FOR JULY 1, 1951; APproved by American Board of Internal Medicine; large charity wards and clinics exclusively used for teaching; selection from 30,000 annual visits to emergency and outpatient departments. Write: Director, Knickerbocker Hospital.*+ 70 Convent Avenue, New York 27, New York. D

HOUSE STAFF OFFICERS—300 BED GENERAL HOSpital *+; with well organized and active teaching program; still has several vacancies for rotating and straight service; stipend for interns $100; residents $200 plus single maintenance. Apply: House Staff Committee, Grant Hospital, Columbus 15, Ohio. D

**APPROVED RESIDENCIES — INTERNAL MEDIcine; urology; obstetrics and gynecology; general surgery; neurosurgery; orthopedics; pathology; general practice; 500 bed hospital*+; excellent teaching staff; board members; $125-$150-$200 monthly plus full maintenance. Write for information. Box 1418 D, % AMA.**

MEDICAL RESIDENCY—APPLICATIONS ARE INvited for a 1 year medical residency fully approved by American Board of Internal Medicine to begin July 1, 1951; salary $130 plus. Apply by letter, wire or in person to: Administrator, Huntington Memorial Hospital.*+ Pasadena 2, California. D

PAID HOUSE RESIDENT—MODERN GENERAL HOSpital; Chicago suburb; 65 beds; salary with complete maintenance; active medical, surgical and obstetrical departments; good experience for a doctor while waiting for an accredited residency. Apply: Superintendent, Hospital, Lake Forest, Illinois. D

SURGICAL RESIDENCY—APPLICATIONS INVITED for a 1 year or a 2 year surgical residency. 4 year residency in cooperation with Orange County Hospital. Apply by letter, wire or in person to: Administrator, Huntington Memorial Hospital.*+ Pasadena 2, California. D

**SECOND YEAR INTERNSHIPS — AVAILABLE throughout the year; rotating services; excellent teaching staff; board members; 500 bed hospital*+; $200 monthly plus full maintenance. Write for brochure explaining training programs. Box 1417 D, % AMA.**

WANTED—RESIDENT; AND ONE FIRST ASSISTANT resident; in medicine; starting July 1, 1951; in 187 bed fully approved hospital. Contact: Director of House Staff Training, Lutheran Hospital of Maryland formerly West Baltimore General Hospital.*+ Baltimore, Maryland. D

INTERNAL MEDICINE AND GENERAL PRACTICE approved residencies; available July 1, 1951; limited number; monthly stipend $175 plus maintenance; allowance; California license required. Apply: Permanente Hospital,*+ 280 MacArthur Blvd, West Oakland, California. D

WANTED—SURGICAL RESIDENT; FOR FOUR YEAR approved service; in 400 bed teaching hospital *+; in New York City; graduation from approved school and internship in approved hospital required; full maintenance and $75 per month. Box 1402 D, % AMA.

*(Continued on page 48)*

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(Continued from page 46)

**INTERNS — OBSTETRICS AND GYNECOLOGY; pediatrics; residents; X-ray; starting July 1, 1951; approved residency training; large university affiliated hospital.*+ Apply: Executive Director, Maimonides Hospital, 4802 Tenth Avenue, Brooklyn, New York. D**

PATHOLOGY RESIDENCIES—AMA CERTIFIED FOR 3 years; available July 1, 1951; 3800 surgical and 600 autopsies; salaries $1512.80-$2352.80, depending on training. Apply: Medical Director, St. Louis City Hospital,*+ 1515 Lafayette Avenue, St. Louis, Missouri. D

ASSISTANT RESIDENCY IN OBSTETRICS AND GYNecology—available immediately; fully approved 3 year program in Ohio hospital.*+; includes pathology in Chicago hospital; 1st year stipend $200 plus maintenance. Apply: Box 1421 D, % AMA.

ROTATING INTERNSHIPS — AVAILABLE FOR ONE year beginning July 1, 1951; grade A schools only; approval by AMA and ACS; $75 per month, full maintenance and uniforms. Apply: Director, Barnert Memorial Hospital,* Paterson, New Jersey. D

**RESIDENCY IN GENERAL PRACTICE—ONE TO 3 year program in the teaching hospitals of a university medical school. Apply: Office of Graduate Education, University of Colorado Medical School, Denver. D**

WANTED — RESIDENT IN GENERAL SURGERY; July, 1951; approved 300 bed general hospital.*+; 1 or 2 year appointments; excellent curriculum and conditions. Apply: Administrator, Doctors Hospital, Washington, District of Columbia. D

ASSISTANT RESIDENCY IN SURGERY—AVAILABLE immediately; fully approved 4 year program in Ohio hospital.*+; includes 1 year basic sciences at leading university; 1st year stipend $200 plus maintenance. Apply: Box 1420 D, % AMA.

RESIDENTS — APPLICATIONS CONSIDERED FOR surgery; also, opening for general residency; stipend $200 per month, plus full maintenance. Apply: Medical Director, Doctors Hospital,*+ 12345 Cedar Road, Cleveland Heights 6, Ohio. D

**MEDICAL AND ASSOCIATE MEDICAL RESIdents wanted—July 1st; 2 year approval; $220 and $210 respectively; large medical and isolation service St. Joseph's Hospital,*+ Lexington, Kentucky. D**

OPENING FOR RESIDENT—IN OBSTETRICS-GYNEcology; beginning now or July 1, 1951; stipend $170-$190 per month plus living out allowance for married men. Apply: St. Joseph's Infirmary,*+ Atlanta, Georgia. D

APPROVED RESIDENCIES AVAILABLE—INTERNAL medicine and general practice; beginning July 1, 1951; 600 bed hospital. Apply: Administrator, Good Samaritan Hospital, Cincinnati 20, Ohio. D

RESIDENT INTERNAL MEDICINE — APPROVED 3 year program; position available July 1st or after. Write: Director, Hermann Hospital,*+ Texas Medical Center, Houston, Texas. D

**PSYCHIATRY AND NEUROLOGY RESIDENCY—available July 1, 1951. St. Luke's Hospital,*+ Chicago 5, Illinois. Apply: Medical Director. D**

RADIOLOGY—APPROVED RESIDENCY; AVAILABLE immediately; teaching hospital,*+ connected with medical school. Apply: Dr. J. Arendt, Mount Sinai Hospital, Chicago 8, Illinois. D

TWO YEAR APPROVED AMERICAN MEDICAL ASsociation residency; in obstetrics; available July 1, 1951; at St. Joseph's Maternity Unit, Hotel Dieu Hospital,+ El Paso, Texas. D

**WANTED—GENERAL PRACTICE FELLOW; WITH long-established sp...ority group; mid-West; control own hospital; outstanding opportunity; good housing and salary; excellent practice available following training; wanted July 1, 1951. Box 1244 D, % AMA.**

VACANCIES FOR RESIDENCY IN INTERNAL MEDIcine; July 1, 1951; at the Veterans Administration Hospital,+ Buffalo, New York; 1000 beds; approved by the Council on Medical Education and Hospitals of the AMA; appointments for 1 year subject to reappointment and promotion; junior resident $2400 per annum; intermediate resident $2700, senior resident $3000; active teaching and research programs with conference seminars and clinics; all types of cases admitted including communicable diseases, tuberculosis, female medicine; quarters and subsistence optional for unmarried residents; affiliation: University of Buffalo School of Medicine; applications should be addressed to the Manager, VA Hospital, Buffalo, New York. D

APPROVED RESIDENCY—OTOLARYNGOLOGY; TWO vacancies July and November; 2 or 3 years; 5 board supervisors including professor and associate professor; residents do all the surgery under supervision; last year did 40 endural mastoidectomies, 14 laryngectomies, etc; salary $2400 minimum; low cost living quarters for family; previous resident's recommendations available. D. A. Corgill, MD, 3629 Caruth, Dallas, Texas. D

BEGINNING JULY 1, 1951—ONE YEAR MIXED RESIdency $185; rotating internship $110; plus full single maintenance; ACS approved; AMA approved for interns training; copies of training program available on request; 122 bed full-service hospital.* with 20,000 yearly OPD visits; 30 miles from New York City; moving to new 236 bed hospital early part 1952. Write: Director, Morristown Memorial Hospital, Morristown, New Jersey. D

TWO AND THREE YEAR MEDICAL AND SURGICAL residencies; 3 year OB-GYN residency available; July 1, 1951; fully approved AMA-ACS; 198 bed general hospital.*+; affiliated University of Michigan decentralized graduate training program; $225 per month 1st and 2nd years; $300 senior year; plus hospitalization insurance. Apply: Director, Pontiac General Hospital, Pontiac, Michigan. D

**PATHOLOGY RESIDENCY—FULLY APPROVED pathologic anatomy and clinical pathology; open July and January 1951; 337 MD teaching hospital; 190 autopsies, 3000 surgicals. Apply: Director of Laboratories, Evanston Hospital,*+ Evanston, Illinois. D**

TWO PENNSYLVANIA STATE APPROVED INTERNships available; July 1, 1951; active general hospital.* with competent staff; excellent accommodations and planned rotating internship program; salary $200 a month; only American grade A medical school graduates considered. Apply: Sacred Heart Hospital, Norristown, Pennsylvania. D

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SURGICAL RESIDENCY — FOR JULY 1, 1951; APproved by board of surgery; large charity wards and clinics exclusively used for teaching; selection from 30,000 annual visits to emergency and outpatient departments. Write: Director, Knickerbocker Hospital,*+ 70 Convent Avenue, New York 27, New York. D

APPROVED RESIDENCIES — IN GENERAL PRACtice; available July 1, 1951 for American Citizens; graduates approved medical schools; 110 bed hospital +; salary $250 and maintenance; apartments available for married residents at reasonable rates. Apply: All Saints Hospital, Fort Worth, Texas. D

VACANCY — FOR TWO SURGICAL RESIDENCIES; approved Chicago hospital *+ with university teaching affiliation; board and room; stipend $135 month. Communicate with: Dr. Hugh McKenna, 2100 Burling St., Chicago, Illinois. D

PATHOLOGY RESIDENCIES—FOR ONE TO THREE years; available on or after July 1951; 7000 surgicals and 500 autopsies; salaries $1548-$2448, depending on training. Apply: University Kansas Medical Schools,*+ Kansas City, Kansas. D

WANTED—RESIDENTS; FOR APPROVED GENERAL practice residencies; 550 bed general hospital *+; 40% autopsies; regulary weekly clinical and pathological conferences; ward rounds, etc; maintenance and $150 per month, beginning July 1, 1951. Apply: Chairman of Intern Committee, Sacred Heart Hospital, Spokane, Washington. D

UROLOGICAL AND MEDICAL RESIDENTS WANTED—530 bed general hospital *+; 3 year approved urological residency; 2 year approved medical residency. For information write: Superintendent, St. Francis Hospital,*+ Peoria, Illinois. D

WANTED — RESIDENTS IN GENERAL PRACTICE, obstetrics and gynecology; and rotating interns; AMA approved; 300 beds; good stipend; organized training program. Write or phone: J. R. Hubert, MD, Chairman, Training Program, St. Joseph Mercy Hospital,*+ Pontiac 19, Michigan. D

RADIOLOGY RESIDENCY — AVAILABLE JULY 1, 1951; at the Brooklyn Cancer Institute; 1 year; 90 bed hospital +; large outpatient service; $960 per annum; and maintenance; accredited by the boards for 1 year training in diagnosis and therapy. Box 1368 D, % AMA.

**OBSTETRICS AND GYNECOLOGY RESIDENCY—fully approved; Northwestern Medical School affiliation; 337 beds; available July 1, 1951. Apply: Administrator, Evanston Hospital, Evanston, Illinois. D**

APPROVED FOR THREE YEARS BOARD TRAINING in internal medicine; senior resident; $225 per month; 1st year resident $175 per month; send letter of application, picture and credentials to Administrator, Nashville General Hospital,*+ Nashville, Tennessee. D

WANTED — RESIDENT PHYSICIANS; TWO; FOR July 1, 1951; 65 bed, general hospital; approved American College Surgeons and American Hospital Asso; salary $200 monthly with full maintenance. Address: Dr. Notes, Chief of Interns, National Homeopathic Hospital, Washington 1, District of Columbia. D

WANTED—RESIDENT AND ASSISTANT RESIDENT physicians; in medicine, surgery and research; in newly completed 300 bed teaching tuberculosis unit of University Medical Center group. Write: Ohio Tuberculosis Hospital, OSU Campus, Columbus 10, Ohio. D

WANTED—RESIDENT IN OBSTETRICS AND GYNEcology; July, 1951; board approved 300 bed general hospital.*+; 2 or 3 year appointments; excellent curriculum and conditions. Apply: Administrator, Doctors Hospital, Washington, D. C. D

PSYCHIATRIC RESIDENCIES—AVAILABLE JULY 1, 1951; department of psychiatry; Bowman Gray School of Medicine +; fully approved for 3 years training; remuneration and maintenance. Write: Director, Graylyn, Winston-Salem, North Carolina. D

**UROLOGY RESIDENCY — FULLY APPROVED; medical school affiliation; 337 beds; Gen July 1, 1951. Apply: Administrator, Evanston Hospital,*+ Evanston, Illinois. D**

**APPROVED RESIDENCY—AVAILABLE WITH A group of anesthesiologists; in private practice of anesthesiology; in the mid-west area. Box 1377 D, % AMA.**

RESIDENT IN MEDICINE—CHICAGO HOSPITAL*+; excellent service. Box 1386 D, % AMA.

WANTED—GENERAL RESIDENT; ROTATING SERVice; 1 year; $300 per month plus maintenance; must have served an approved Internship; hospital * will be 250 beds when addition now under construction is completed. Apply: Chairman, Intern Committee, Luther Hospital, Eau Claire, Wisconsin. D

COMBINED RESIDENCY IN CLINICAL ANESTHESIology and Anesthesia Research—One 3 year residency in Anesthesiology is offered by the Department of Anesthesia and Research Medicine of the University of Pittsburgh School of Medicine; the 1st and 3rd years of the residency will be devoted to clinical training in Anesthesiology; and will be spent in the Department of Anesthesia of the Mercy Hospital*+ in Pittsburgh, Pennsylvania, with Dr. F. F. Foldes, assistant professor of anesthesiology; the second year will be spent in the department of research medicine at the Children's Hospital+ in Pittsburgh, Pennsylvania with Dr. T. D. Danowski, professor of research medicine; this residency, besides thorough training in all branches of anesthesiology, will offer instruction in various biochemical, physiological and pharmacological methods necessary for independent research in anesthesiology; requirements, graduation from approved medical school and internship in approved hospital; stipend, $150 per month with full maintenance in the first 2 years and considerably more in the 3rd year. For further particulars write to Dr. F. F. Foldes, Director of Anesthesiology, Mercy Hospital, Pittsburgh 19, Pennsylvania. D

(Continued on page 50)

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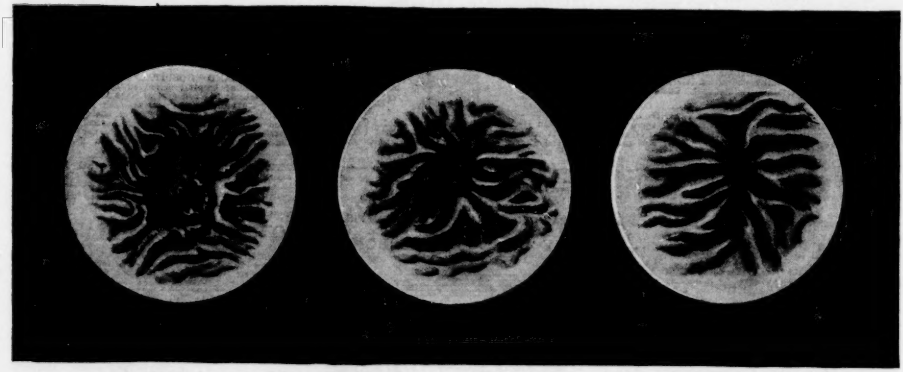

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*(Continued from page 48)*

WANTED — RESIDENTS; FOR GENERAL HOSpital*; in Florida; rotating service; salary $300 per month; without maintenance. Box 1240 D, % AMA.

APPROVED ROTATING INTERNSHIP — $100 PER month plus room, board and laundry. Apply: Intern Committee, Chester Hospital,* Chester, Pennsylvania. D

**RADIOLOGY RESIDENCY — FULLY APPROVED 3 year program; 800 bed general hospital; with active inpatient and outpatient X-ray facilities; research and teaching; full maintenance and stipend. Apply Medical Director, Michael Reese Hospital,*+ 29th and Ellis Ave., Chicago 16, Illinois. D**

APPROVED OB-GYN RESIDENCY—AVAILABLE JULY 1st; excellent training program; 1600 births and 700 Gyn. operations annually; 1 or 2 years of previous training desired; $150-$200 per month plus maintenance; Interview required. St. Elizabeth Hospital,*+ Lafayette, Indiana. D

BOARD APPROVED RESIDENCIES—AVAILABLE IN Radiology; 1 year; Pathology, 1, 2, 3 and 4 years; Anesthesiology, 2 years; 646 bed teaching hospital*+; affiliated with New York University; stipend. Apply: Administrator, St. Vincent's Hospital, New York 11, New York. D

**WANTED — RESIDENT; SURGERY; $200; INtern; $130; full maintenance, individual room; both approved; surgery preparation specialties; program includes seminars, pathological conferences, weekly conferences; 165 beds. Kanawha Valley Hospital, Charleston, West Virginia. D**

ANESTHESIOLOGY RESIDENCIES—TWO YEAR APproved residencies in Anesthesiology are available on each on or before September 1, 1951; and another on January 1, 1952; department in charge of full time diplomate and assistant; 12,000 anesthesias yearly; active departments of thoracic and neuro surgery; ample opportunity for regional nerve blocks; thorough theoretical instruction in basic sciences; university affiliation; requirements, graduation from approved medical school and internship in approved hospital*+; stipend, $150 per month with full maintenance. For further particulars write: Dr. F. F. Foldes, Director of Anesthesiology, Mercy Hospital, Pittsburgh 19, Pennsylvania. D

EAR, NOSE AND THROAT—TWO YEAR RESIDENCY; plus university basic science course; starting July 1st; training in head and neck surgery, plastic surgery, bronchoesophagology. Apply: Superintendent, New York Eye and Ear Infirmary,+ 218 Second Ave., New York 3, New York. D

**INTERNAL MEDICINE—AMA AND BOARD APproved residencies; very active municipal hospital*+; $140 per month with maintenance. Write: B. G. Dinin, M.D., Medical Superintendent, Cumberland Hospital, Brooklyn, New York. D**

RESIDENCIES IN OPHTHALMOLOGY AND OTOlaryngology—ENT Hospital; graduates of approved medical schools with internships; 1,431 admissions; 44,442 outpatients; lectures; conferences; ward rounds; $100 per month; maintenance. Box 1340 D, % AMA.

AVAILABLE — INTERNSHIPS AND RESIDENCIES; July 1, 1951; AMA, ACS approved 373 bed general hospital*+; residencies in medicine, surgery, obstetrics and gynecology, pathology, radiology fully approved 1-3 years and university affiliation; desirous of making appointments at early date. Apply: Chairman, Graduate Training Committee, Aultman Hospital, Canton, Ohio. D

**PATHOLOGY RESIDENT — ACTIVE 300 BED Hospital; 3 year approval. Apply: Pathologist, Passaic General Hospital, Passaic, New Jersey. D**

RESIDENCY IN PATHOLOGY—ONE-FOUR YEARS; fully approve; 380 bed hospital*+; teaching affiliation with Jefferson Medical College; $150 per month and full maintenance. Write: Frank R. Lynch, Jr., MD, Germantown Hospital, Philadelphia 44, Pennsylvania. D

ANESTHESIOLOGY APPROVED TWO YEAR RESIdency; complete training program; 337 bed teaching hospital*+; immediate appointment available; stipend and full maintenance. Apply: Director, Mount Sinai Hospital, 2750 West 15th Place, Chicago 8, Illinois. D

RESIDENCIES IN SURGERY AND MEDICINE—OPEN to outstanding candidates only; in 300 bed fully approved general hospital*+; with outstanding teaching program and full quota of interns. Write or telephone: John W. Rankin, Director, James Walker Memorial Hospital, Wilmington, North Carolina. D

APPROVED RESIDENCY — IN PATHOLOGY AND clinical pathology; 2 years; fully approved hospital; 150 autopsies, 3500 surgicals; $150 to start. Apply: Director of Laboratories, Saint Joseph's Hospital,*+ Lancaster, Pennsylvania. D

ANESTHESIOLOGY RESIDENCY — CORRELATED with other residency teaching; supervised by 3 medical anesthesiologists; $1500-$1800; maintenance. William J. Martin, Jr., MD, Director, Department of Anesthesiology, St. Vincent Hospital.*+ Worcester, Massachusetts. D

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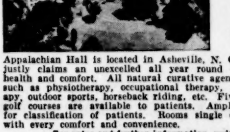

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**PATHOLOGY—ONE RESIDENT AND THREE ASSIStant residents; needed July 1, 1951; training program comprises morbid anatomy, surgical pathology, clinical pathology; affiliated with medical examiner and department of legal medicine; salary commensurate with experience. Write: Head, Department of Pathology, Box 817, Medical College of Virginia, Richmond, Virginia. D**

WANTED—INTERNS AND HOUSE PHYSICIANS; LUtheran Hospital, St. Louis, Missouri; general hospital*; approved internship; excellent rotating service; 195 beds; salary and maintenance. Apply: Superintendent, Lutheran Hospital, 2646 Potomac St., St. Louis 18, Missouri. D

PATHOLOGY—APPROVED RESIDENCY; COMMENCing immediately; stipend $150 per month; full maintenance. Pathologist, Samaritan Hospital, Troy, New York. D

RESIDENCY—JULY 1, 1951-JUNE 30, 1952; ROTAting service; 126 bed general hospital; salary and maintenance; graduates foreign schools considered; working knowledge English essential. The Polyclinic Hospital, 6606 Carnegie Avenue, Cleveland 3, Ohio. D

WANTED—RESIDENTS IN PSYCHIATRY; SALARY $4400 per annum; large eastern mental hospital +; approved; excellent teaching program; training for boards. Box 1339 D, % AMA.

**MEDICAL RESIDENCIES—AVAILABLE JULY 1, 1951; St. Luke's Hospital,*+ Chicago 5, Illinois. Apply to the Medical Director. D**

RESIDENT — GENERAL RESIDENCY; 225 BED chronic disease sanitarium; New Jersey State license essential. Box 1297 D, % AMA.

**OPENING — IMMEDIATELY OR JULY 1, 1951; 5 year approved residency in medicine; in 350 bed general hospital*+; excellent teaching staff, active teaching program, large out patient department; starting at $200. Box 860 D, % AMA.**

OPENINGS FOR RESIDENTS—IN APPROVED SERVice; internal medicine, obstetrics, pathology, anesthesiology, and neurology July 1st. also general practice; stipend $260-$315 per month; women eligible; 700 bed midwest voluntary hospital.*+ Box 1333 D, % AMA.

WANTED—RESIDENT; IN INTERNAL MEDICINE; 400 bed hospital*+; AMA approved for training in internal medicine; well balanced teaching program; salary and maintenance. Apply: Superintendent, Wesley Hospital, Wichita 6, Kansas. D

RESIDENCIES — AVAILABLE JULY 1, 1951; TO graduates of class A medical schools; internal medicine, surgery, obstetrics and gynecology; 330 bed fully approved general hospital.*+ Apply: St. Elizabeth Hospital, Youngstown, Ohio. D

WESTMORELAND HOSPITAL*+ — GREENSBURG, Pennsylvania; hospital accredited by AMA and ACS; training school; 240 bed general community hospital with a $2,500,000 building program; available July 1, 1951 to July 1, 1952; 1 year residency; mixed; conference teaching method with supervision in surgery, gynecology, medical, obstetrics and pediatrics; stipend $400 per month with maintenance; eligibility for Pennsylvania license necessary. D

WANTED — RESIDENT; FOR TRAINING IN GENeral practice; 400 bed hospital*+; AMA approved for internship, internal medicine, surgery and obstetrics; well balanced teaching program; salary and maintenance. Write: Superintendent, Wesley Hospital, Wichita 6, Kansas. D

ROTATING INTERNSHIP—APPROVED BY AMA AND Pennsylvania State Board; 240 bed general community hospital*+; with training school; July 1, 1951 to July 1, 1952; conference method teaching program with supervised experience in surgery, medical, pediatrics, gynecology, obstetrics, etc. Westmoreland Hospital, Greensburg, Pennsylvania. D

INTERN WANTED—BEGINNING JULY 1, 1951; 172 bed general hospital; rotating service; approved by AMA and ACS; graduates from A schools only; salary plus full maintenance. Evangelical Deaconess Hospital,* 4229 Pearl Road, Cleveland 9, Ohio. D

OTOLARYNGOLOGY RESIDENCY—TEACHING HOSpital*+; 2 or 3 year appointment; service including broncho-esophagology, rhinoplasty and endural surgery; AMA residency approved; available July 1, 1951. Long Island College Hospital, 340 Henry Street, Brooklyn, New York. D

WANTED—RESIDENT; IN OB-GYN; 400 BED HOSpital*+; AMA approved for 1 years training in OB-GYN; excellent teaching program, salary and maintenance. Apply: Superintendent, Wesley Hospital, Wichita 6, Kansas. D

UROLOGY RESIDENT—2 YEAR APPROVED RESIdency starting July 1, 1951; exceptional opportunity to train under busy board diplomate urologists; full maintenance and monthly stipend. Mount Sinai Hospital, Chicago 8, Illinois. D

ANESTHESIOLOGY RESIDENCY—TWO YEARS; APproved by the American Board of Anesthesiology; open July 1, 1951; $100 plus maintenance 1st year; $150 2nd year. Apply: Dr. Daniel C. Moore, Chief of Anesthesiology, Virginia Mason Hospital,*+ Seattle 1, Washington. D

APPROVED RESIDENCY—IN PATHOLOGY; AVAILable July 1, 1951; 500 bed general hospital*+; 60 miles from New York; $100 per month; full maintenance. Write: Administrator, Bridgeport Hospital, Bridgeport, Connecticut. D

INTERN VACANCIES—JULY 1, 1951; GRADUATE class A schools; rotating services; regular lectures and conferences; full maintenance; uniforms; $100 per month; 500 bed general hospital*+; 60 miles from New York; residencies available in pathology, radiology, obstetrics, after internship. Write: Administrator, Bridgeport Hospital, Bridgeport, Connecticut. D

RESIDENT IN SURGERY—APPROVED BY AMA FOR training in preparation for the surgical specialties. Fairview Park Hospital,*+ 3305 Franklin Blvd., Cleveland 13, Ohio, Philip Vollmer, Jr., Superintendent. D

WANTED—RESIDENT; FOR 100 BED ORTHOPEDIC hospital; full program children's orthopedics, industrial and reconstructive surgery; good salary and living quarters. Huntington Orthopedic Hospital, Huntington, West Virginia. D

*(Continued on page 52)*

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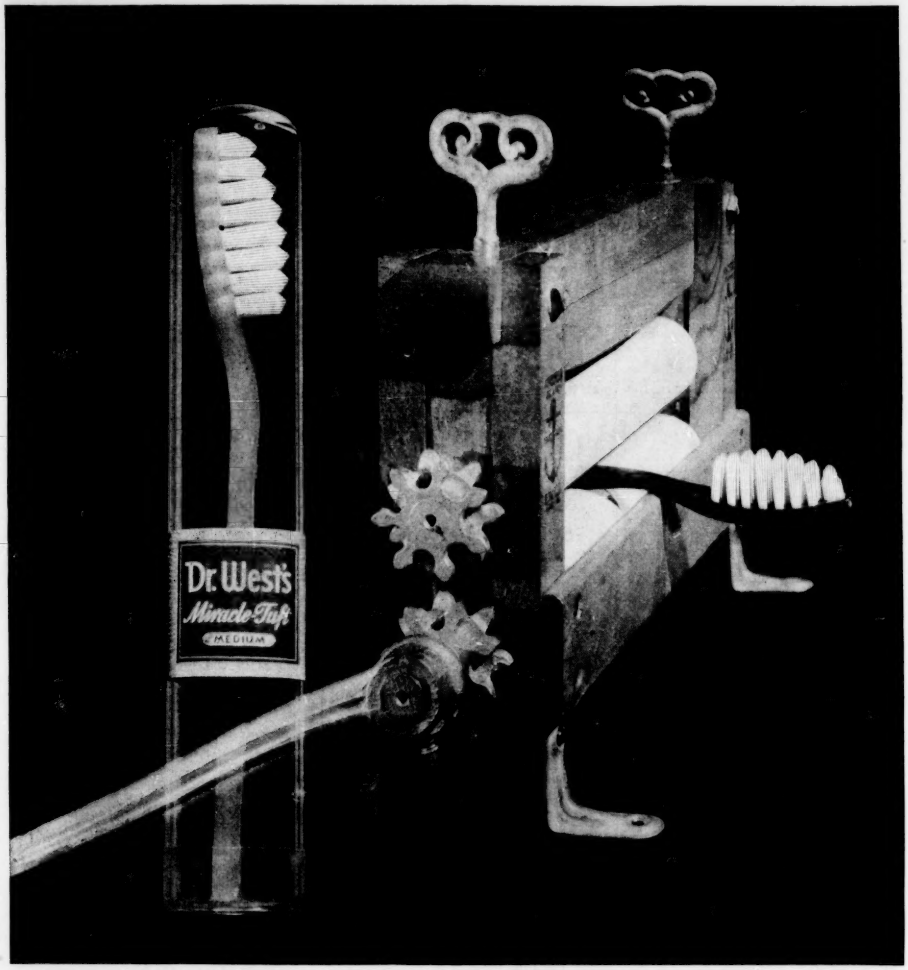


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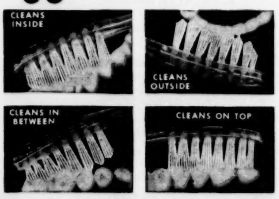

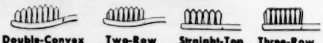


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*(Continued from page 50)*

**ONE YEAR RESIDENCY IN MEDICINE**—AMA AND board approved; 1880 medical admissions; active out patient, Fairview Park Hospital,* † 3305 Franklin Blvd., Cleveland 13, Ohio, Philip Vollmer, Jr., Superintendent. D

**RESIDENT POSITIONS OPEN**—160 BED, MODERN, progressive, general; voluntary hospital; surgery and obstetrics are particularly active; maintenance plus $200 monthly; state license not required. Adelphi Hospital, 50 Greene Ave., Brooklyn 5, New York. D

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**PHYSICIAN**—32; DRAFT CATEGORY FOUR; MARried, 2 children; interning in teaching hospital; desires association in general practice in Savannah, Georgia. Hollis E. Puckett, MD, 800 Northampton Drive, Silver Spring, Maryland. I

**PATHOLOGIST AND CLINICAL PATHOLOGIST** — certified; experienced in routine teaching and research; many contributions international'y known; age 65; health excellent; prefers active service in an eastern to central center to being retired. Box 1399 I, % AMA.

**GENERAL PRACTITIONER** — YOUNG VETERAN; married; desires location in Tennessee, Mississippi, Arkansas, Alabama; will consider association. Available July 1, 1951; licensed Tennessee Box 1408 I, % AMA.

**PATHOLOGIST**—CERTIFIED PATHOLOGIC ANATOMY and clinical pathology; Diplomate National Board; 20 years laboratory and research experience; numerous papers; desires position in approved hospital, research teaching, preferred. Box 1411 I, % AMA.

**ORTHOPEDIST**—MARRIED; 31 YEARS OLD; CATEgory IV; excellent training in adult orthopedics and fractures; desires assistantship to board diplomate in orthopedic surgery; available July 1st Box 1167 I, % AMA.

**PHYSICIANS**—TWO YOUNG; ESSENTIALLY DRAFT exempt; desire equipped clinic; in progressive town in US; preceptorship or partnership considered; furnish details; prompt replies; available August. "Doctors," 4601 Leland St., Chevy Chase, Maryland. I

**RADIOLOGIST**—MARRIED; BOARD ELIGIBLE; FOUR years military service; desires position with hospital or clinic; preferably in Mid-West; unusually good training in diagnosis and therapy including isotopes. Box 1118 I, % AMA.

**PHYSICIAN**—NEW YORK LICENSE; MANY YEARS experience; Internal medicine, psychiatry, dermatology; wants change of position; at present employed at approved hospital with great activity; going everywhere. Box 1134 I, % AMA.

**OTOLARYNGOLOGIST** — AGE 30; MARRIED; CATEgory 4; desires association with group or private established practice, or with EENT man who needs assistant in ENT; trained in endoscopy and rhinoplastic surgery; prefer Mid-West. Box 1393 I, % AMA.

**SURGEON** — 34; MARRIED; MILITARY STATUS category V; 5 years training; chief resident 650 bed hospital; board eligible; main interest peripheral vascular and malignant disease; considerable experience in gastroenterology and gynecology; training includes fractures, bronchoscopy; available personal interview July 1st; desire group, clinic or location midwest, far west. Box 1391 I, % AMA.

**EENT** — CERTIFIED IN OTOLARYNGOLOGY; CAN do office ophthalmology; age 40; veteran; draft exempt; prefer South or Southwest. Box 1389 I, % AMA.

**OBSTETRICIAN AND GYNECOLOGIST** — 34; Board qualified; 2 years successful private practice; desires association with individual or group or prefers purchase of practice in New York metropolitan area or South. Box 1048 I, % AMA.

**INTERNIST**—PASSED AMERICAN BOARD PART 1; 33; MARRIED; 4½ years Navy; on staff teaching hospital 4 years; desires association with individual or group; consider any location. Box 1324 I, % AMA.

**PATHOLOGIST**—DRAFT EXEMPT; WIDE EXPERIence in clinical and tissue pathology, including tumors; board diplomate in clinical pathology and pathologic anatomy; numerous publications; wants association with group, hospital or location for private laboratory. Box 1292 I, % AMA.

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*(Continued on page 54)*

V 146
1951

# The first phase of medical care

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(Continued from page 52)

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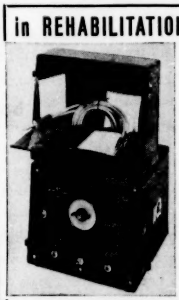

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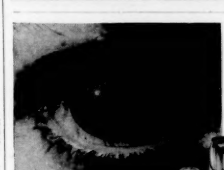

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V 146
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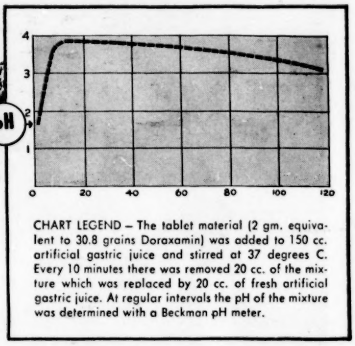


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*References:*

1 Krantz, Kibler and Bell: "The Neutralization of Gastric Acidity with Basic Aluminum Aminoacetate," J. Pharmacol. and Exper. Therap., 82:247 (1944).

2 Paul, W. D., and Rhomberg, C.: "Medical Management of Uncomplicated Peptic Ulcer," J. Iowa M. Soc. 35:167-85 (1945).

3 Holbert, J. M., Noble, Nancy, and Grote, I. W.: J.A.Ph.A., Scientific Edition, 36:149 (1947).

4 Holbert, J. M., Noble, Nancy, and Grote, I.W.: J.A.Ph.A., Scientific Edition, 37:292-294 (1948).

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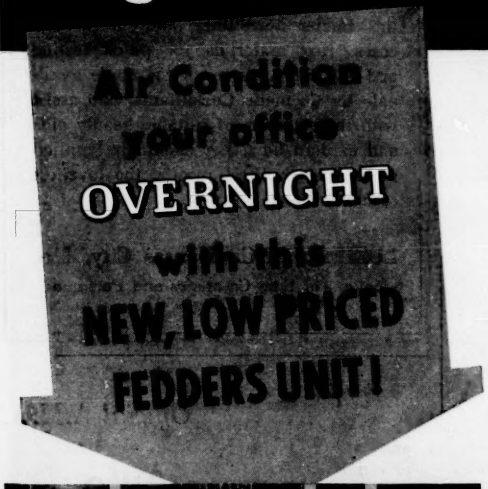

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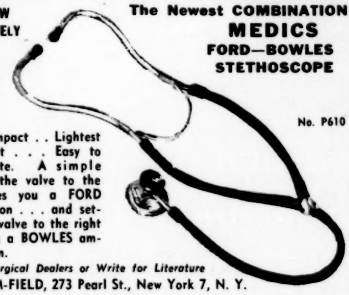

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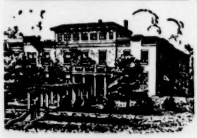

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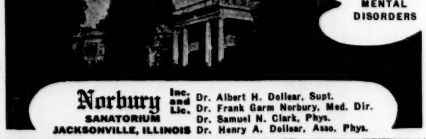

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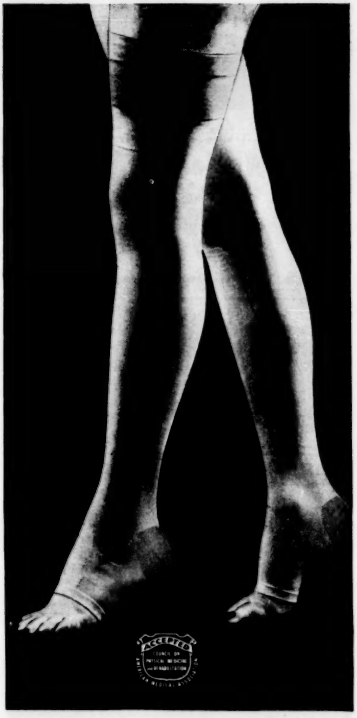

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1. Hutcheson, J. M.: Management of Cardiac Failure. *Virginia Med. Monthly*, 74:458, Oct., 1947.
2. Noth, P. H.: Pick's Disease: A Record of Eight Years' Treatment with Salyrgan, Ammonium Nitrate, and Abdominal Paracentesis. *Proc. Staff Meet. Mayo Clin.*, 12:513, Aug. 18, 1937.

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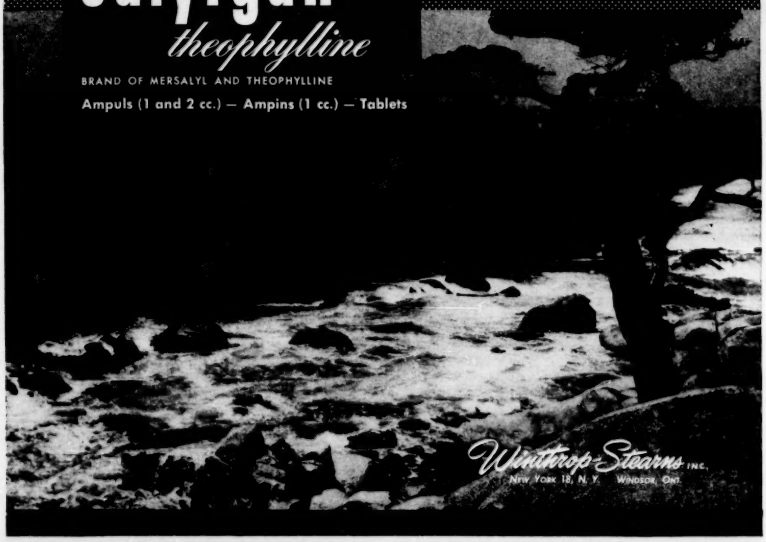

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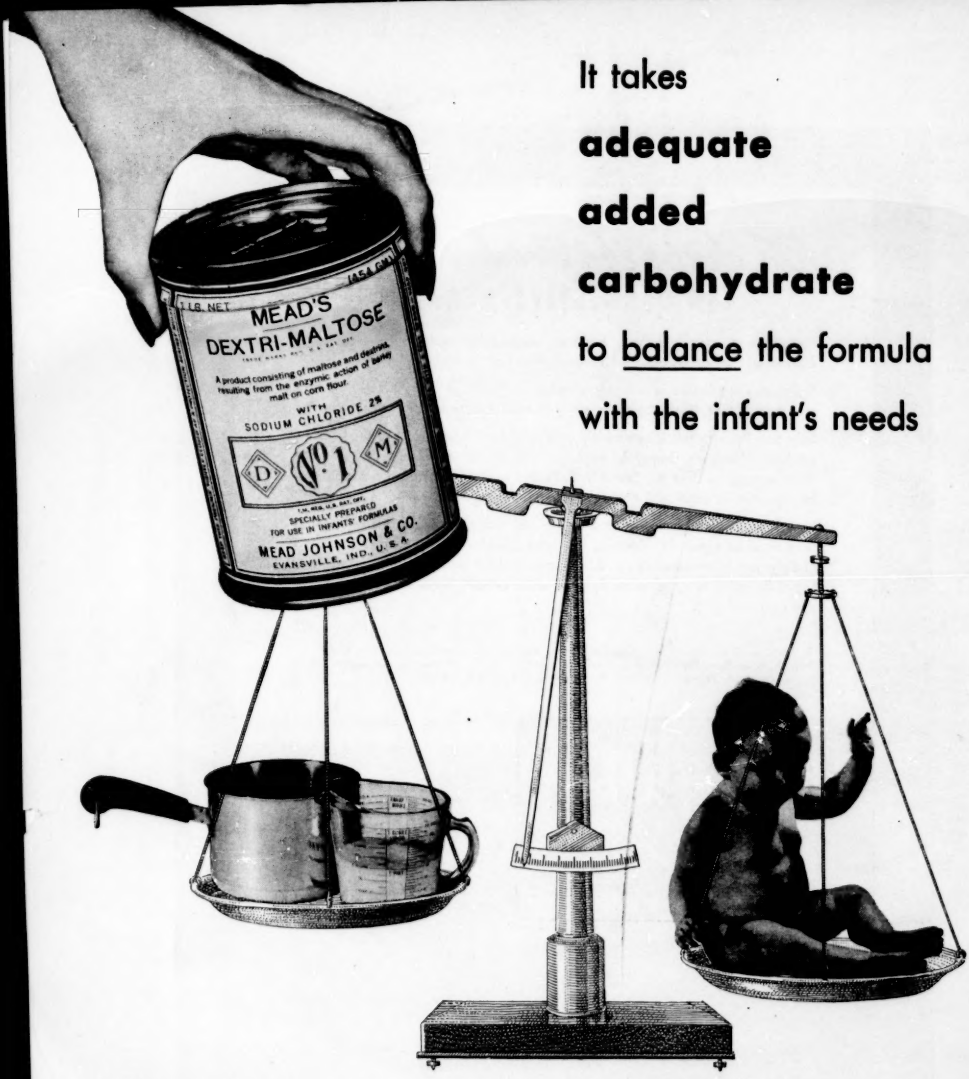
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